Saskatchewan Agriculture, Food and Rural Revitalization

Varieties of grain crops 2004

Crop Production Areas

The cropland of Saskatchewan has been divided into four areas based roughly on climate, vegetation and soil type. The relative yields of crop varieties tend to vary from area to area. In choosing a variety, farmers will want to consider the yields in their area and special requirements such as early maturity, disease resistance and sawfly resistance.

Area 1: Drought is a definite hazard and high winds are common. Sawfly outbreaks often occur in this area. Cereal rust may be a problem in the southeastern section.

Area 2: Drought and sawflies may be problems in the western and central sections of the area. Cereal rust may be a problem in the southeastern section.

Area 3: Drought is not as likely to be a problem in this area, particularly in the east. Cereal rust may occur in the eastern portion. The frost-free period can be fairly short in the northwestern and northeastern sections.

Area 4: Rainfall is usually adequate for crop production. However, early fall frosts and wet harvest weather are frequent problems.

Note About Dividing Lines:

The dividing lines do not represent distinct changes over a short distance. The change from one area to another is gradual.

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Symbols Used in 2004 Seed Guide:

^ Variety may not be described in 2005

— Insufficient test data to describe

Plant Breeders' Rights at time of printing

Applied for PBR protection at time of printing

Abbreviations used:

Relative maturity: VE = Very Early, E = Early, M = Medium, L = Late, VL = Very Late

Resistance: VG = Very Good, G = Good, F = Fair, P = Poor, VP = Very Poor

n/a = not applicable

Seed size: S = Small, M = Medium, L = Large

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Testing varieties in Saskatchewan

By Saskatchewan Agriculture, Food and Rural Revitalization

Regional testing of crop varieties is conducted to provide producers with information on the agronomic performance of crop varieties under differing agro-climatic conditions.

Trials are conducted using multiple small plots, uniform protocols and standard check varieties. Data is collected from as many sites as are available and analyzed to ensure that the results are within statistical norms and are not unduly affected by extreme events (ie. severe drought, hail, insects, etc.).

Results in this pamphlet are aggregated on a zone basis. For all crops except canola, results are reported by crop production areas (roughly corresponding to soil zones) and are aggregated over a number of years of regional and, in some cases, co-op testing. Canola testing this year was coordinated by the Canola Council of Canada and its partners. Tests were conducted on a prairie wide basis using the short-, mid- and long-season zones that have been used for many years in the co-op testing system for canola. The canola table is based on data from 2003 testing.

The results of the testing are reviewed by the Saskatchewan Advisory Council on Grain Crops prior to inclusion in this publication.

Relative yield of varieties

Grain yield results from the interplay of genetic factors and non-genetic factors. Variety trials are designed to measure the differences among varieties that are due to genetic causes. It is important to minimize variability due to non-genetic factors such as soil type, nutrients, moisture, weeds, diseases, and other pests. Experimental designs using replication (repeated plantings of the varieties) and randomization (the position of the varieties within the test are assigned by chance) are then used to estimate the precision with which the genetic factors can be measured.

Yield potential of a variety is estimated by measuring the weight of grain produced per unit area.

Comparisons among varieties for yield potential involves an evaluation of both their absolute amounts of grain and their relative yield. Relative yield is the yield of one variety expressed as a percentage of a second variety.

Yields obtained in these trials are not identical to those obtained under commercial production conditions. However, the average yield for these varieties, obtained over a number of years at several locations, would remain in relatively the same ratio regardless of whether the grain yields were measured in small plots or large-scale fields. Relative yields are the best estimates of expected yield advantage in the areas indicated.

Relative Maturity

Ratings

Maturity is measured from seeding to swathing ripeness. The actual number of days to reach maturity depends on local climatic conditions and to some extent on management practices.

Some of the following tables express the relative maturity in days while others use a five category scale: VE, E, M, L, and VL (very early, early, medium, late, very late). Medium applies to the most widely grown check variety which appears at the top of each table. The limits for each category vary from crop to crop. In barley, for example, Harrington would be medium with L and E varieties plus or minus 1-2 days, and VL and VE varieties beyond these.

Comparisons

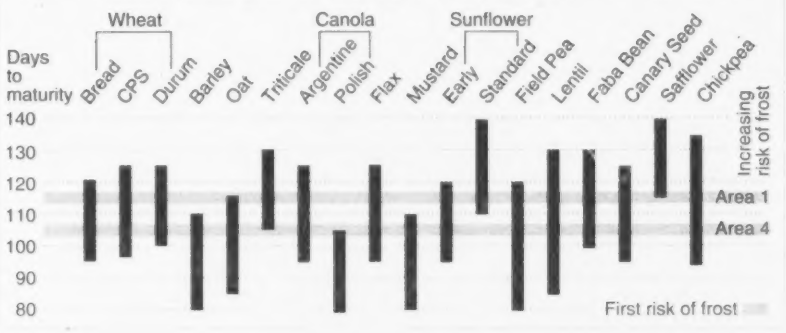
The relative maturity of varieties of different crops is important when making plans for seeding.

The table below compares the relative maturity ranges for crops grown in Saskatchewan.

Within each crop there are early and late maturing varieties. Whether a crop matures before the first killing frost depends on seeding date, management practices and environmental factors. Not all crops have a wide area of adaptation.

It is noted that climatic conditions can cause a wide variability in crop maturity.

Relative maturity ranges for spring crops grown in Saskatchewan



Plant Disease Resistance

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Resistance to the most important diseases in western Canada is generally assessed in each crop before the variety is registered. The methods used to assess resistance in each crop are different. In some cases, spores of the pathogen are applied to plants in the greenhouse or in the field. In other cases, assessment is based on naturally occurring infection in the field. Each variety is rated on a five-point scale of very poor (VP), poor (P), fair (F), good (G), very good (VG). New varieties are not tested side-by-side with all existing varieties. Because of variation in disease levels from year to year, each new variety is assigned a rating relative to a few existing varieties that serve as disease level standards or checks.

Varieties differ in resistance because of differences in their genetic make-up and/or differences in the genetic make-up of the pathogen that causes the disease. However, the genetic make-up of a pathogen can change over time, and overcome the resistance in a variety. In such cases, a variety with good resistance can quickly display poor resistance to a particular disease. Unfortunately, because not all varieties are tested side-by-side every year, the ratings of older varieties may be less reliable.

A number of factors can affect the level of disease symptoms observed at a given location in a given year. Environmental conditions such as moisture and temperature, the genetic make-up of both the variety and the pathogen, and the amount of the pathogen present can all affect the level of disease. Although a variety with good resistance can show disease symptoms under favourable conditions, a susceptible variety would have much more disease under the same conditions.

For example, ascochyta blight of chickpea is a very aggressive fungal disease. It can completely kill susceptible varieties within two weeks of symptoms first appearing.

Chickpea varieties grown commercially in Saskatchewan to date have ascochyta blight ratings from very poor to fair. This resistance weakens as plant development nears the flowering stage. Cool, moist environmental conditions favour the disease, and if these conditions persist early in the growing season, the disease symptoms can occur much earlier than the flowering stage. This is especially true on chickpea grown outside the Brown Soil Zone (the area of best adaptation) or on heavy textured soils such as clays and clay loams.

In these conditions, varieties with ascochyta blight resistance ratings of very poor to poor do not show good resistance to ascochyta and can be defoliated, with girdled branches and dead plants. If conditions turn warm and dry, the diseased plants can re-grow from auxiliary nodes, often producing flowers and pods. However, these late pods and seeds will most likely be frozen in the first fall frost and have no commercial value.

What is Plant Breeders' Rights

Plants Breeders' Rights provides a way to assure that companies and institutions that invest in plant breeding are able to keep reasonable control of their varieties and secure fair compensation for their efforts. This encourages additional investment in improved crop varieties for Canadian farmers.

PBR

Progress through Research

Plants Breeders' Rights for crop variety developers are comparable in many ways to patent protection in other areas. When a plant breeder develops a new variety for use in Canada, he may apply under the Plant Breeders Rights Act to obtain certain controls over the multiplication and sale of the seed of that variety. Sale, trade or any other transfer of the
seed for propagation purposes is prohibited by law without;
1) the written permission of the breeder or his agent and;
2) payment of a royalty to the breeder or his agent. Under PBR, farmers are allowed to save seed of the variety for their own use, on their own farms.

Varieties protected by Plant Breeders' Rights are identified with the PBR logo above.

Further information on Plant Breeders' Rights can be obtained from the Plant Breeders' Rights Office, tel. (613) 225-2342, fax (613)228-6629.

Cereal Crops

Wheat

Main characteristics of varieties

Variety	No. of years tested	Area 1	Area 2	Area 3	Area 4	Irrigation	Relative Maturity in days	Protein	Resistance to: Lodging	Shattering	Sprouting	Stem Rust	Leaf Rust	Loose Smut	Bunt	Fusarium Leaf Spot	Fusarium Head Blight
Bread Wheat		—Yield as % of AC Barrie—															
AC Barrie	11	100	100	100	100	100	100	14.9	G	G	G	G	P	G	G	P	F
AC Abbey	8	98	94	94	95	—	-1	-0.8	F	G	P	G	P	F	G	P	P
CDC Bounty	5	105	103	105	107	—	-1	-0.1	F	G	F	G	F	G	F	P	F
AC Cadillac	7	100	103	102	101	98	-1	-0.2	F	G	F	G	G	VG	VG	P	F
AC Cora ^	8	99	97	94	95	92	-2	-0.3	F	G	F	G	VG	G	G	P	F
AC Domain ^	6	96	94	94	86	89	-2	+0.1	G	G	VG	G	G	VG	F	VP	P
AC Eatonia	7	92	94	90	84	—	0	+0.2	P	G	VG	F	P	F	G	P	—
AC Elsa	7	102	104	105	98	97	-1	-0.1	F	G	F	G	G	G	G	F	P
Harvest o	4	102	100	105	97	—	-1	-0.5	VG	G	VG	G	G	G	G	P	VP
CDC Imagine o	3	96	99	100	—	—	0	0	G	G	—	F	G	G	G	P	P
AC Intrepid	5	101	100	105	104	102	-3	-0.3	G	G	P	G	G	F	G	P	P
Journey	4	101	96	100	92	—	+2	+0.4	VG	G	F	G	G	F	G	F	F
Katepwa	9	97	94	92	94	89	-2	-0.5	F	G	F	G	VP	G	G	P	F
Laura ^	8	100	103	98	95	82	+1	-0.4	F	G	F	G	G	F	P	P	P
Lillian o	2	107	107	101	—	—	0	-0.1	G	G	G	G	VG	F	G	P	VP
Lovitt	3	107	101	100	102	—	-1	-0.1	G	G	VG	G	VG	G	F	—	P
AC Majestic ^	8	93	97	97	96	86	+2	-0.2	G	F	VG	G	P	F	G	F	F
McKenzie	5	107	105	102	96	109	-1	-0.5	F	G	G	G	VG	VP	VG	P	F
Prodigy	5	103	104	106	99	—	+1	+0.4	G	F	G	G	G	F	VG	P	VP
AC Splendor	9	91	92	94	92	89	-4	+0.4	F	G	F	G	G	F	G	VP	P
Superb o	4	108	106	111	105	—	+3	-0.3	G	G	G	G	F	F	G	VP	P
CDC Teal	7	98	100	103	96	96	-2	-0.1	G	G	P	G	G	G	F	P	VP
5500HR	5	98	99	100	99	—	+1	-0.5	F	G	F	F	G	P	G	P	F
5600HR	5	99	100	99	102	—	+2	-0.5	G	G	F	F	VG	G	G	P	P
5601HR o	4	92	94	96	105	—	+2	-0.1	G	G	F	G	G	P	G	P	F
Canada Prairie Spring - Red Seeded*																	
AC Crystal	11	118	118	115	118	111	+3	-1.0	VG	G	P	G	P	P	VG	F	VP
AC Foremost	5	119	122	118	116	109	+2	—	VG	G	F	G	P	P	VG	P	VP
AC Taber	5	117	122	118	114	116	+4	—	VG	G	P	G	F	P	VG	F	VP
5700PR	5	114	116	119	122	115	+2	-1.3	VG	G	P	G	F	P	VG	P	VP
5701PR o	4	106	109	108	—	—	+2	-0.3	G	G	P	G	VG	P	F	F	P
Canada Prairie Spring - White Seeded*																	
AC Karma ^	8	117	122	119	121	110	+2	—	G	G	P	G	P	P	VG	P	P
AC Vista	9	119	124	122	120	113	+1	-1.3	G	G	F	G	P	P	VG	P	VP
AC2000	5	109	111	111	109	104	+3	-1.3	VG	G	F	F	P	F	VG	P	P
Hard White Wheat																	
Kanata o	4	93	89	92	91	—	-2	0	G	G	G	F	G	F	P	P	F
Snowbird o	4	102	98	103	98	—	+2	-0.6	G	G	G	G	VG	G	F	P	P
Canada Western Extra Strong*																	
Amazon o	5	102	102	105	105	—	+2	-1.1	F	G	P	G	G	VG	F	F	P
AC Corinne	5	99	101	102	106	—	+3	-1.1	F	G	P	G	G	VG	F	P	P
Glenavon	5	100	102	103	108	—	+2	-1.1	F	G	P	G	G	VG	F	P	P
Glenlea ^	8	102	105	108	112	—	+2	-1.4	F	G	P	G	F	VG	F	P	P
CDC Rama	4	107	104	106	107	—	+2	-0.2	F	G	P	G	G	VG	G	P	F
Durum Wheat		—Yield as % of Kyle—															
Kyle	13	100	100	100	100	100	+3	14.0	P	VG	F	VG	VG	P	VG	P	VP
AC Avonlea	9	105	106	108	—	106	+2	+0.1	F	VG	F	VG	VG	P	VG	P	VP
AC Morse	8	104	103	109	—	111	+3	-0.1	G	VG	F	VG	VG	VP	VG	VP	VP
Napoleon o	4	104	105	108	—	—	+2	-0.5	F	VG	F	VG	VG	P	VG	P	VP
AC Navigator	5	104	101	99	—	—	+3	-0.3	G	VG	F	VG	VG	VP	VG	VP	VP

*** Includes direct and indirect comparisons with AC Barrie**

Wheat (Continued from page 4)

Additional Information

All varieties of common wheat are compared to **AC Barrie**.

Several new races of leaf rust capable of overcoming leaf rust resistance gene Lr 16 have multiplied rapidly. If varieties rated poor or very poor for leaf rust are sown in southeastern Saskatchewan, early seeding may minimize risk of crop losses.

Durum wheat varieties are more susceptible than CWRS varieties to Fusarium Head Blight and CPS varieties are intermediate.

All varieties have moderately good resistance to common root rot.

Seed of varieties rated poor and very poor for bunt and loose smut should be treated. Please refer to the **Seed Facts** section of this pamphlet or ***Guide to Crop Protection, 2004***.

Most of the varieties have been rated for their relative resistance to pre-harvest sprouting. During wet harvests, grades drop more rapidly due to sprouting in swathed than in standing crops.

Canada Western Red Spring Wheat

Seed of the new variety **Lillian** will not be available in 2004. Limited quantities of seed of the new varieties **Harvest, CDC Imagine, Journey, Lovitt,** and **5601HR** will be available in 2004.

Alsen has not been supported for registration and is eligible for grades of Canada Feed only. **AC Abbey**, **AC Eatonia**, and **Lillian** have a solid stem and have some resistance to the wheat stem sawfly. **AC Abbey** has semidwarf stature and an awned head.

AC Cadillac and **CDC Bounty** have large seed size and an exceptionally heavy test weight. **McKenzie** has an awned head and it may also be identified by a purplish stem. **CDC Imagine** is tolerant to the CLEARFIELD® herbicide ADRENALIN. **Prodigy** has an awned head and exceptionally heavy test weight. **Superb** has an awned head, and very large seeds. **Superb** has slightly shorter stature than **AC Barrie**.

Canada Prairie Spring Wheat

AC Vista and **AC2000** have higher protein content, and stronger gluten than **AC Karma**.

AC Crystal, **5700PR** and **5701PR** have improved quality compared to **AC Foremost** and **AC Taber**.

Canada Western Extra Strong

Limited quantities of seed of **CDC Rama** will be available in 2004.

Canada Western Amber Durum

All durum varieties are susceptible to two new races of loose smut. Seed can be treated to provide control. See the **Seed Facts** section for details.

Kyle receives better grades than other varieties even under adverse harvesting conditions.

AC Avonlea has shorter stronger straw than **Kyle. AC Avonlea** has higher pigment content in the grain than other varieties. **AC Morse** and **Napoleon** have shorter stronger straw and lower test weight than **Kyle**.

AC Navigator has extra strong gluten properties and semidwarf stature. It may be grown only under contract with the Canadian Wheat Board and Saskatchewan Wheat Pool.

Soft White Spring Wheat

AC Reed and **AC Phil** are moderately resistance to shattering, powdery mildew, and common root rot, moderately susceptible to leaf and stem rust, and susceptible to common bunt. **AC Phil**, generally, has less black point than **AC Reed**. **AC Nanda** has improved resistance to common bunt, powdery mildew, and black point. It yields slightly less than **AC Reed** and **AC Phil** and is about 4 days later maturing. **AC Andrew** has higher grain yield and matures about 2 days later than **AC Reed** and **AC Phil**. Limited quantities of seed of **AC Andrew** and **AC Nanda** will be available in 2004.

Soft white spring wheat varieties are susceptible to pre-harvest sprouting.

The Advisory Council on Grain Crops, a committee of the Saskatchewan Agricultural Services Co-ordinating Committee (SASCC), supervises, co-ordinates and reviews the collection, analysis and reporting of information in this pamphlet.

Membership of the Advisory Council on Grain Crops consists of representatives from:

- Agriculture and Agri-Food Canada
- Saskatchewan Agriculture, Food and Rural Revitalization
- University of Saskatchewan
- Crop Development Centre
- Saskatchewan Wheat Pool
- Canadian Seed Trade Association
- Saskatchewan Seed Growers' Association
- Saskatchewan Association of Rural Municipalities
- Farmers
- Saskatchewan Irrigation Development Centre
- Representatives from Saskatchewan Seed Distributing Companies

The Advisory Council on Grain Crops gratefully acknowledges the contributions of Saskatchewan Agriculture,Food and Rural Revitalization; Agriculture and Agri-Food Canada; Crop Development Centre, University of Saskatchewan; Saskatchewan Wheat Pool; Agricore United; SeCan; Canterra Seeds; and all others who were involved in the research and analysis which led to the recommendations made in this publication.

Contributing Agencies

Agriculture and Agri-Food Canada / Agriculture et Agroalimentaire Canada

Saskatchewan Agriculture, Food and Rural Revitalization

University of Saskatchewan

POOL Saskatchewan Wheat Pool

Agricore United

SeCan

CANTERRA SEEDS

Winter Wheat

Main characteristics of varieties

Variety	Years tested	Grain Yield as a % CDC Kestrel — Areas 1 and 2	Areas 3 and 4	Irrigation	Lodging	Winter Damage	Resistance to Stem Rust	Leaf Rust	Bunt
CDC Kestrel	13	100	100	100	G	VG	P	P	P
AC Bellatrix	5	101	97	N/A	G	G	VP	P	G
CDC Clair	13	100	102	97	G	VG	P	P	P
CDC Osprey	13	100	100	91	G	VG	P	P	P
CDC Harrier	10	103	98	106	G	G	G	P	P
CDC Falcon	9	99	93	114	VG	F	VG	G	P
CDC Raptor	7	100	100	108	VG	VG	VG	G	P
CDC Buteo	6	96	97	109	G	VG	G	G	P
McClintock ●	6	98	97	109	G	P	VG	VG	P

Rye

Main characteristics of varieties

Variety	Years tested	Yield as a % of Prima — Area 1	Area 2	Area 3	Area 4	Maturity	Resistance to Winter Damage	Shattering	Lodging	Stem Smut
Prima	14	100	100	100	100	M	VG	F	F	G
AC Rifle	14	107	95	93	—	M	VG	VG	VG	G
AC Remington	3	128	110	99	—	M	VG	VG	G	—

Additional information:
Gazelle is the only registered variety of spring rye. **Danko** and **Kodiak** are very susceptible to winter damage in Saskatchewan and, therefore, should only be considered for production using some form of conservation tillage.

Triticale

Main characteristics of varieties

Variety	Years Tested	Yield as a % of AC Certa — Area 1	Area 2	Area 3	Area 4	Irrigation[x]	Test Wt kghl^{-1}	Maturity	Resistance to Lodging	Stem rust	Leaf rust	Bunt	Root rot
AC Certa	12	100	100	100	—	100	74	M	G	VG	VG	VG	G
AC Alta	12	105	105	99	—	109	68	L	G	VG	VG	VG	F
AC Copia	12	99	100	96	—	99	72	M	G	VG	VG	VG	F
Pronghorn	11	98	103	102	—	107	69	E	G	VG	VG	VG	F
Sandro	9	106	104	101	—	—	73	E	G	VG	VG	VG	G
AC Ultima	8	105	104	102	—	—	70	E	G	VG	VG	VG	F

[x] Relative Yields under irrigation are based on limited data

Additional Information
Triticale matures one to two days later than **AC Crystal** CPS wheat and, therefore, should be planted as early as possible. Some cultivars of triticale will mature very late in Area 4. The seeding rate for triticale should be at least 30 per cent more than that of CWRS wheat to obtain the same number of plants per square foot. Susceptiblity to Fusarium Head Blight is at least as great in triticale as in wheat. **AC Ultima** is a new cultivar of spring triticale. It has improved Hagberg Falling Number.

Winter triticale has winter hardiness equal to that of winter wheat. **Pika** and **Bobcat** are the only cultivars of winter triticale available. **Bobcat** is awnletted with shorter and stronger straw.

Malting Barley

Main characteristics of varieties

Category ♣ and variety	Years Tested	2 or 6 row	Rough or smooth awns	—Yield as % of Harrington— Area 1	Area 2	Area 3	Area 4	Relative maturity rating *	Straw ‡	Resistance to: Lodging	Net Blotch	Scald	Loose Smut	Other smuts	Root Rot	Stem Rust	Fusarium ♦ Head Blight
Malting acceptance: Recommended																	
Harrington	15	2	R	100	100	100	100	M	N	F	VP	P	P	P	F	P	F+
CDC Copeland	7	2	R	109	117	120	120	M	N	G	F	P	P	F	F	F	F+
CDC Kendall	10	2	R	101	112	114	118	M	N	G	F	P	P	P	F	G	F
Merit	8	2	R	107	124	125	125	L	N	F	F	P	P	G	F	G	F
AC Metcalfe	10	2	R	102	110	112	115	M	N	G	F	P	VG	F	F	G	F
Stein	15	2	R	105	107	113	115	M	N	F	F	P	P	G	P	G	F
CDC Stratus	10	2	R	101	114	118	120	M	N	G	F	P	F	F	F	G	F
B1602	11	6	R	89	107	107	116	M	N	G	F	P	P	G	VG	G	VP
Excel	9	6	S	102	112	117	119	M	N	VG	F	P	P	G	G	G	VP
Legacy	5	6	S	110	109	105	122	M	N	G	F	P	P	F	G	G	P
Robust	7	6	S	88	105	111	108	M	N	G	F	P	P	F	G	G	VP
CDC Sisler	9	6	S	100	109	117	118	M	N	F	P	P	P	P	F	G	F
Malting acceptance: Under test																	
AC Bountiful	10	2	R	105	113	119	117	M	N	G	G	P	VG	VG	F	G	F
Calder ○	4	2	R	—	121	113	110	M	N	F	G	P	VG	VG	F	G	F+
Newdale ○	5	2	R	118	120	120	120	M	N	G	F	P	P	F	F	G	F
CDC Select	6	2	R	104	114	113	116	M	N	G	F	P	F	F	F	F	P
CDC Battleford	5	6	S	110	121	115	130	M	N	G	G	P	VP	G	F	G	P
Lacey	3	6	S	—	102	99	—	M	N	G	F	P	P	G	G	VG	VP
CDC Springside ○	3	6	S	—	123	109	—	M	N	F	F	P	P	VG	F	G	VP
Tradition	3	6	S	—	125	112	—	M	N	VG	F	P	P	VG	G	G	VP
CDC Tisdale ○	5	6	S	107	111	105	117	M	N	G	G	P	P	G	F	G	P
CDC Yorkton	7	6	S	99	112	118	128	M	N	G	G	P	P	G	F	G	P

* Relative maturity: The relative maturity of the check, Harrington, is M (on average, 91 days from seeding to swathing ripeness)

‡ N = normal, SD = semi-dwarf,

♣ These categories are established annually by the Canadaian Malting Barley Technical Centre (Call 204-984-4399 for more information)

♦ F+ indicates that these lines have superior resistance to those rated F but not enough to rate G

Lines Under Evaluation of Malting and Brewing Quality

Small scale tests are a good measure of malting potential but are not sufficient to determine the commercial acceptability of malting varieties. Final acceptance is given only after two years of successful plant scale evaluation. Several carload lots of barley are malted and subsequently brewed. The beer is then given the ultimate test – a taste panel. This process will normally take a minimum of three years. A crop grown in 2004 will be malted in January-February, 2005. It will be brewed in May-June, 2005, aged and tasted in October-November 2005.

Additional Information:

Growers are reminded that the malting and brewing industry is cautious about using new varieties.

Growers are cautioned that malting varieties, especially two rows, are very susceptible to sprouting.

CMBTC

CANADIAN MALTING BARLEY TECHNICAL CENTRE

Recommended Malting Barley Varieties 2004-2005

These recommendations are based on the varieties expected to be selected by grain and malting companies for both domestic and export markets from the 2004 harvest. Seeding decisions should be based on agronomic considerations and feedback from your grain company representative, local elevator operators and malting companies. This list is published on behalf of the members of the CMBTC, and other companies that have provided their input. Varieties not listed are not recommended.
The varieties are listed in descending order to the amount selected in 2003/2004.

Recommended Two-Row Barley Varieties

VARIETY	DOMESTIC	EXPORT	MARKET OUTLOOK
AC Metcalfe[4]	Established	Established	Stable, high demand
Harrington[4]	Established	Established	Stable, moderate demand
CDC Kendall[3,5]	Established	Limited	Stable, moderate demand
Stein[1]	Limited	Limited	Stable, low demand
CDC Stratus[1]	Established	No market	Stable, low demand
Merit[1,2,3,5]	Limited	Limited	Low, increasing US demand
CDC Copeland[1]	Growing	Growing	Increasing demand

B1202 is being selected for limited domestic markets. CDC Select (TR153), Newdale (TR258), Calder (TR262), and AC Bountiful (TR243) are not yet being grown for the commercial market. Production is limited to quantities required for testing and market development.

Recommended Six-Row Barley Varieties

VARIETY	DOMESTIC	EXPORT	MARKET OUTLOOK
Excel	Established	Established	Stable demand
Robust	Limited	Established	Declining demand
B1602[1,2,5]	Limited	Limited	Stable, low demand
Legacy[1,2,3,5]	Growing	Growing	Increasing, moderate demand
CDC Sisler[1]	Established	No market	Stable demand

CDC Battleford (BT456), CDC Yorkton (BT459), CDC Tisdale (BT462), CDC Springside (BT478), and Lacey (BT965) are not yet being selected for the commercial market. Production is limited to quantities required for testing and market development. Tradition (BT954) is being selected in limited commercial quantities for the US export market.
"Domestic" as used in this publication, means barley selected for domestic processing into malt to supply domestic brewers as well as for malt destined for export. "Export" is that malting barley designated for markets outside of Canada including the US, shipped as unmalted grain.

The CMBTC recommends the use of Certified seed to ensure varietal purity and to increase opportunity for selection.

The following companies have Pedigreed seed distribution rights for those varieties that are footnoted:
1- (Agricore United); 2- (BARI-Canada); 3 - (QAS); 4 - (SeCan); 5 - (SWP).

Varieties selected for domestic use

(five year average)
993,000 total tonnes delivered
(350,000 to domestic brewers)

Varieties selected for export

(five year average)
990,000 tonnes delivered

CMBTC Members: Agricore United, Bunge Agricultural Resources Canada, Canada Wheat Board, Cargill Grain Division, Cargill International Grain, Malteurop Malting, Maltex Research International, Quality Assured Seeds, the Prairie Pool Business, Syngenta Grain, Wheat Pool, SeCan

Other organizations providing input to this list: Canada Co-Ag Grain, Farm Credit Canada, Parrish and Heimbecker, Viterra Inc Canada

Questions? Call your selector, seed company, grain handling company or the Canadian Wheat Board, or contact the CMBTC at 204-984-4390 (cmbtc@cmbtc.com)

CMBTC

CANADIAN MALTING BARLEY TECHNICAL CENTRE

Recommended Malting Barley Varieties 2004-2005

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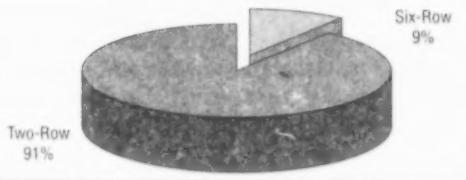
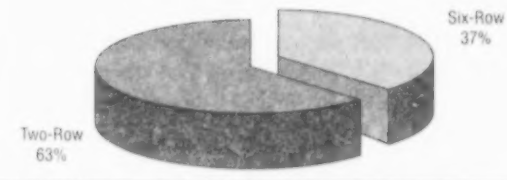
Varieties selected for domestic use

(five year average)
993,000 total tonnes delivered
(350,000 to domestic brewers)



Varieties selected for export

(five year average)
990,000 tonnes delivered



CMBTC Members: Agricore United, Busch Agricultural Resources-Canada, Canadian Wheat Board, Canadian Grain Commission, Canadian International Grains Institute, Dominion Malting, James Richardson International, Quality Assured Seeds, the Public Plant Breeders, Saskatchewan Wheat Pool, SeCan.

Other organizations providing input to this list: Cargill, ConAgra Grain, Toepfer Canada, Parrish and Heimbecker, LouisDreyfus Canada.

Questions? Call your selector, seed company, grain handling company or the Canadian Wheat Board, or contact the CMBTC at 204-984-4399 (cmbtc@cmbtc.com)

Feed and Food Barley

Main characteristics of varieties

Category and variety	Years Tested	2 or 6 row	Rough or smooth awns	-Yield as % of Harrington- Area 1	Area 2	Area 3	Area 4	Relative maturity rating *	Straw ‡	Resistance to Lodging	Net Blotch	Scald	Loose Smut	Other smuts	Root Rot	Stem Rust	Fusarium Head Blight ♦
Feed																	
CDC Bold	6	2	R	114	122	125	128	L	SD	G	P	G	P	VG	G	G	VP
CDC Dolly	10	2	R	106	113	116	117	M	N	G	P	G	P	G	F	G	F
CDC Fleet	10	2	R	89	97	101	102	VE	N	VG	F	G	P	VP	P	G	F+
CDC Helgason	6	2	R	107	115	115	114	M	N	G	G	P	VG	G	F	F	P
Niobe ●	4	2	R	—	107	105	112	M	N	F	F	P	P	G	P	G	P
Rivers ●	3	2	R	—	111	111	110	M	N	G	G	P	P	VG	P	F	F
CDC Trey	3	2	R	—	114	109	113	M	N	VG	VG	P	VG	VG	F	G	F
Xena	6	2	R	113	123	130	126	M	N	G	F	P	P	VG	F	G	F+
AC Harper	10	6	S	107	116	121	117	M	N	G	F	G	P	F	F	G	VP
AC Lacombe	12	6	S	101	117	120	121	M	N	G	F	F	P	VG	F	G	VP
AC Rosser	10	6	S	114	129	131	134	M	N	G	F	VP	P	VG	G	G	VP
Stander	10	6	S	94	116	124	128	M	N	VG	F	P	P	P	G	G	VP
Trochu	5	6	S	97	119	119	136	M	N	F	P	F	P	G	G	G	P
Hulless																	
CDC Dawn	10	2	R	96	105	121	104	M	N	F	F	G	P	F	F	G	F+
CDC Freedom	8	2	R	90	100	104	102	M	N	G	F	P	—	G	P	G	F+
CDC Gainer	9	2	R	87	96	100	101	M	N	F	F	G	P	F	F	G	F
HB 805	4	2	R	95	108	113	108	L	N	F	F	P	F	G	F	F	F
CDC McGwire	7	2	R	97	111	112	114	M	N	G	VG	G	P	G	G	F	F
Tercel	9	2	R	90	95	98	99	M	N	F	P	P	P	F	F	G	F
AC Bacon	8	6	R	92	107	109	110	M	N	G	P	G	P	F	F	G	F+
Peregrine	6	6	R	71	80	87	90	M	SD	VG	F	F	P	P	G	G	VP
Intensive Management																	
CDC Earl	10	6	R	99	111	110	120	L	SD	VG	G	G	P	G	G	G	VP
Kasota	8	6	S	97	106	109	108	E	SD	G	F	G	P	G	P	G	VP
Mahigan	8	6	S	106	112	114	115	E	SD	VG	F	G	P	G	P	G	VP
Niska	6	6	S	105	120	123	129	L	SD	F	P	P	P	G	P	G	VP
Vivar	6	6	R	114	117	112	131	L	SD	G	F	P	F	G	F	G	VP

* Relative maturity: The relative maturity of the check, Harrington, is M (on average, 91 days from seeding to swathing ripeness)

‡ N = normal, SD = semi-dwarf,

♦ F+ indicates that these lines have superior resistance to those rated F but not enough to rate G

Forage Barley

Dillon, **AC Hawkeye**, **AC Ranger**, and **Westford** are six row varieties marketed as forage barley.

Hulless

In hulless varieties the hull is left in the field, therefore, comparable yields are 9-12 per cent lower. Hulless seed is more susceptible to damage than hulled seed, so handling should be minimized.

Hulless Waxy

CDC Alamo, **CDC Candle**, **CDC Fibar**, **HB803** and **Merlin** are waxy starch varieties for specialty markets. For further information contact Agricore United.

Irrigation

Disease resistance, straw strength and maturity are more critical under irrigation. Growers should select early, strong-strawed, disease-resistant varieties and should consider semi-dwarf varieties.

Feed and Food Barley (Cont'd)

General Comments
A race of stem rust that attacks all of our previously resistant varieties is present in the eastern prairies and the northern great plains. This race has not reached high levels but if conditions are favorable, it could become a problem. Early sowing is the only practical measure which can be taken at this time.

Of the current two-rowed varieties, only **CDC McGwire** has good field resistance to all races of net blotch. Therefore, growers who must plant barley on barley stubble should either select six-rowed varieties which are more tolerant or the above mentioned two-rowed variety.

Most of the available varieties are susceptible to one or more types of smut. Therefore, seed should be treated on a regular basis.

Harvesting grain over 16 per cent moisture and then using aeration bins for drying can lead to sprouting and embryo death. Seed with reduced germination is undesirable for seeding or malting.

Two-rowed barley varieties are generally more resistant to shattering than six-row varieties.

Oat

Main characteristics of varieties

	Years	Area				Test wt.	%	%	Maturity	Resistance to			
Variety	Tested	1	2	3	4	(g/0.5L)	Hull	Plump	Rating*	Lodging	Stem Rust	Leaf Rust	Smut
Calibre	13	100	100	100	100	250	22.9	44	M	G	VP	VP	P
AC Assiniboia	11	92	99	95	95	240	22.9	74	M	VG	VG	VG	VG
CDC Boyer	11	99	104	100	99	236	22.6	81	E	G	VG	F	P
CDC Dancer	6	99	102	100	102	257	19.2	80	M	G	VG	VP	VG
Derby	13	100	101	103	103	251	22.2	74	M	G	VP	VP	P
SW Exactor	6	97	108	105	101	241	25.0	44	L	VG	VP	VP	F
Furlong ●	4	–	101	105	–	250	20.4	87	L	G	VG	VG	VG
Kaufmann	6	93	99	96	93	250	22.1	85	L	F	VG	VG	VG
AC Morgan	7	102	110	108	111	242	24.2	63	M	VG	VP	VP	F
CDC Orrin ●	5	103	108	112	108	257	22.5	81	L	G	VP	VP	VG
CDC Pacer	9	101	109	108	103	245	23.7	71	M	G	VP	VP	F
Pinnacle	7	108	116	111	108	245	23.1	80	VL	G	G	VG	VG
Ronald	6	91	99	98	101	253	21.8	62	L	VG	VG	VG	VG
Triple Crown	10	95	105	107	108	238	24.7	67	L	VG	VP	F	P

* Maturity rating: M = 96 days

Additional information:
AC Assiniboia has brown hulls.

HULLESS OAT: **Boudrias**, **Bullion**, and **AC Gwen** are hulless varieties available for production in Saskatchewan. The hull is part of normal oat yield, thus hulless types yield less. They are difficult to handle and should be stored at less than 12% moisture.

CDC Baler, **CDC Bell**, and **Murphy** are annual forage oat varieties available for forage production in Saskatchewan.

Aphids in Saskatchewan Crops

Aphids were a common insect problem in many areas of the province in 2003. Although most reports of economic infestations were from pea crops in the eastern half of the province, there were also high numbers of aphids in fields in the southwest and the northwest. Some perceived infestations and associated spray applications may have been related more to the hype that had been created by this unfamiliar problem and inexperienced scouting, than to actual economically significant populations being present. In many instances however, aphids were at levels where insecticide control was justified.

Associated with the widespread infestations in peas were inquires with respect to aphids in other crops. This has not been a common Saskatchewan problem (except perhaps for canaryseed). The following guidelines are based on research and communication with researchers and entomologists in provincial, state and federal agriculture departments from Saskatchewan, Manitoba and North Dakota.

General Considerations – All Crops

- Being soft-bodied, aphids may be very sensitive to physical disturbance. A heavy rain or severe wind can dislodge aphids and reduce their numbers in a crop.
- Aphids have piercing, sucking mouthparts and prefer actively growing feeding sites. The feeding interferes with the flow of nutrients and water in the sap required for filling seeds. If seed filling is complete and the crop ceases to be lush and actively growing, new offspring in the aphid populations will develop into winged forms and migrate to other greener crops.
- Timing and necessity of insecticide applications:
  - Regular monitoring is essential in identifying changes in population densities. All crops should be treated on a case by case basis.
  - Generally the crucial time to monitor for aphids is at the beginning of flowering or in cereal crops, just prior to head emergence.
  - Application of insecticide too early may lead to rebounding populations and will be unlikely to provide a yield response. Late application has no beneficial result and will be an unnecessary expense as the aphids cannot damage crops that have completed seed filling. Research has shown that the best result from insecticide application for economic infestations of aphids on peas will be prior to late flowering to early pod. From this stage until soft dough there will be a diminishing yield response by the plants as a result of insecticide application. Although vulnerability will differ depending on the crop and environmental conditions this appears to be a reasonable guideline for aphids in most types of crops.
- High numbers of aphids feeding at the bases of flowers and developing pods may result in abortion of flowers, reduced filling and possibly fewer seeds per pod. If there is sufficient moisture the plants may be able to compensate for some of the moisture loss but not necessarily for nutrient loss as a result of aphid feeding. Although aphids appear to more adversely affect a crop under moisture stress, if water is not a limiting factor the crop is likely to yield well and will assure that the insecticide control cost can more easily be recovered.
- Beneficial insects can play a major role in managing aphid populations. Aphids have many predators, including ladybird beetle adults and larvae, ambush bugs, minute pirate bugs, and hover flies. Several species of tiny wasps lay their eggs in aphid nymphs, killing the nymph and forming shiny pearl-like aphid "mummies", from which the adult wasp emerges. In humid conditions an entomophthoran disease can kill large numbers of aphids. These natural control agents may not always be effective in reducing large infestations, but when aphid numbers are around threshold levels, allowing natural enemies to manage the aphid population may often be a better alternative than insecticides. Because of their rapid ability to increase numbers, aphids have been known to rebound to high levels several weeks after insecticide application. This happens because populations of natural enemies have been reduced and these populations will take longer to rebuild than will the aphids. If winged forms of aphids increase over several days in a crop, it is likely the aphids are ready to migrate to greener crops or over-wintering sites on perennial legumes. Regular monitoring for beneficial insects, as well as for numbers and form of aphids, is important and can save considerable expense and labour.
- Because aphid populations tend to be aggregated or clumped in distribution it is important to check several areas in a field to determine the extent of the infestation and economic threshold for the full field. Spot spraying may be an option with populations that are unevenly distributed but significant in certain areas.
- There are a lot of different species of aphids in Saskatchewan. Many species of aphids will only feed on a select group of host plants. Although some may feed on more than one crop, not all species of aphids will attack all crops.

Economic Thresholds for Aphids:
Contributing factors affecting the economic thresholds: market value of the crop, cost of control, moisture conditions, crop stage.

1) Field Peas - There are a number of reasons to consider a higher threshold than the current 2 to 3 per 20 cm plant tip. A more current threshold could be considered to be in the 9 – 12 range or even higher if there are good growing conditions or the crop is further advanced in pod filling. It has been suggested that if the entire plant (all tillers) is considered, a pea plant may be able to tolerate up to 40 aphids. The chart below is from research on aphids on peas from Dr. Bob Lamb (retired, A.A.F.C., Winnipeg) and provides an estimate of yield loss related to aphid numbers. This research was done in Manitoba. It is thought that the effect of aphid feeding may vary depending on growing conditions and region of the province (southern versus northern areas) where heat unit accumulation will differ.

Aphids per tip	%yield loss
1	3.4
2	4.9
3	6.1
4	7.1
5	8.0
6	8.8
7	9.6
8	10.3

2) Lentil - Information on aphids in lentil from North Dakota suggest an ET with 3 qualifiers:

- 30 to 40 aphids per 180 degree sweep and few natural enemies are present and aphid numbers do not decline over a 2 day period.

3) Canaryseed – based on U.S. and Australian research the current recommendation for considering insecticide application for aphids on canaryseed is:

- 10 to 20 aphids on 50% of the stems

4) Cereals (e.g. wheat barley) - 12 to 15 aphids per stem prior to soft dough

5) Flax – 2 to 3 aphids per main stem at full bloom - 8 aphids per main stem at green boll stage (main stem = main yield component – usually the primary stem)

6) Canola – More than one species of aphid can attack canola and their location of feeding differs. Green peach and cabbage aphids will feed mostly on leaves and are therefore not as important as the turnip aphids that that are generally the ones seen to be clustered on stems during flowering and early podding. As a guideline researchers have suggested that if 10 to 20% of the stems have clusters of the aphids, control is likely warranted.

Other Crops

Canary Seed

The seed of annual canarygrass, more commonly called canary seed, is used as food for caged and wild birds. Three registered varieties are available. **Elias** and **Keet** are similar in yield, but **Keet** is earlier maturing and more resistant to lodging. Seeds and plants of **CDC Maria** do not have the small sharp hairs that cause irritation when canary seed is threshed and handled. Canary seed plants have a dense shallow root system and growing the crop on sandy soils is therefore not recommended. Canary seed may be grown successfully on stubble, providing adequate moisture is available for rapid germination and emergence. The maturity requirements are equal to wheat.

Planting should occur at the same optimum date as spring wheat at 34 kg/ha (30 lb/ac) (germination greater than 85 per cent). Early seeding may lower yields in some cases. Plant the seed 3.5 to 5 cm deep into a firm seedbed.

Fertilizer requirements are similar to those for cereal crops.

Canary seed is subject to damage by English grain aphid and bird cherry-oat aphid. Aphid populations build up rapidly on leaves, stems and head of the plant in August and may require an insecticide application to prevent yield loss. Information from the United States indicates that infestations of 10 to 20 aphids on 50 per cent of the stems prior to soft dough stage may cause enough damage to warrant insecticide application. The aphids often hide in the dense head of canary seed. Damage may occur at populations below these levels.

Canary seed leaf mottle is a foliar disease that can cause yield losses. Leaf mottle is caused by a fungus, *Septoria triseti*, that only affects canary seed. The disease is inconspicuous at early stages because there is little visual contrast between healthy and diseased leaf area. Stubble borne inoculum is the source of infection, thus crop rotation is key in limiting the severity of leaf mottle.

Canary seed should not be seeded on land that was treated with trifluralin or ethalfluralin the previous year.

Canary seed is resistant to shattering. It may be straight-combined or swathed when fully matured.

For more information on canary seed, consult the SAFRR publication, *Canary Seed in Saskatchewan.*

Safflower

Safflower is an annual oilseed or birdseed crop which can be grown successfully in the Brown soil zone. Safflower must be sown early (late April).

Saffire matures in about 120 days. Seed shallow but into a firm moist seedbed at about 30 kg/ha (27 lbs/ac). **Saffire** has moderate resistance to Sclerotinia head rot and Alternaria leaf spot. Contract production is advised.

AC Stirling has acceptable birdseed quality and higher oil content compared to **Saffire**. **AC Sunset** has the earliness of **Saffire** combined with higher oil content and resistance to Sclerotinia head rot.

Buckwheat

Buckwheat is sensitive to high temperatures and dry weather conditions in the blossom stage which can reduce seed set and yields. New self-pollinated varieties are being released. Buckwheat is very susceptible to frost at all stages of growth. Delayed seeding is advisable to avoid spring frost.

Caraway

Caraway is a biennial spice crop, producing seed in the second year and sometimes in the third year. Seedlings are small, slow in developing and compete poorly with weeds. The crop is usually swathed because of its indeterminate growth habit and seed shattering. For more information, consult the SAFRR publication, *Caraway in Saskatchewan.*

Fenugreek

Fenugreek is a leguminous spice crop adapted to dryland conditions in the Dark Brown and Brown soil zones. The crop should be seeded early to avoid yield and quality loss from fall frost. Contract production is advisable, as markets are limited.

Coriander

Coriander is an annual spice crop. Seedlings are small, slow to develop, and compete poorly with weeds. The large seeded type is earlier maturing than the small seeded type. **CDC-Major** is a large-seeded coriander variety and **CDC-Minor** is a small-seeded variety. The crop is usually straight-cut to avoid wind damage in swaths. For more information consult the SAFRR publication, *Coriander.*

Seed Facts

Pedigreed Seed
Use certified seed regularly. This assures that the seed has high genetic purity, high germination and is relatively free from weeds and other crop seeds.

Reuse of Hybrid Variety Seed
Seed grown from a hybrid variety (regardless of crop or variety) should not be reused since a 20 to 25 percent yield reduction can occur in the next generation. This reduction is due to loss of hybrid vigour and possible occurrence of male-sterile plants. Lack of uniformity for maturity and quality traits will also occur.

Seed Cleaning
Seed should be cleaned carefully to remove weed seeds, trash, small or broken kernels, ergot and sclerotia. Not all seed-cleaning plants are equipped to clean grain to seed standards.

Seed Treatment
Use of seed from cereal crops infected with Fusarium may result in poor emergence. Such seed should be treated with a registered fungicide before planting. Use of infected seed may introduce Fusarium diseases into unaffected areas.

Smuts that attack wheat, barley, oat and rye can be controlled by chemical seed treatment. If seed from a crop in which bunt or smut was observed must be used for seed, seed treatment should be considered. *If the presence of smut is uncertain, varieties rated VERY POOR should be treated every year, those rated POOR every second year and those rated FAIR every third year.* Only systemic fungicides will control true loose smut of barley and wheat, and stem smut of rye. Pathogens causing the other types of smut (covered, false loose, oat and bunt) are carried on the outside of the seed and can be controlled by non-systemic seed treatments containing maneb or thiram.

The virulent form of blackleg of canola is widespread in Saskatchewan. Seed treatment with a recommended fungicide can reduce the level of disease. Use of canola seed commercially coated with an appropriate seed dressing is a convenient alternative to on-farm seed treatment.

Various fungicides have been registered for the control of seedling diseases. Flax, canola, rye and winter wheat seed should be treated to promote good seedling growth. Wireworms, which attack all grain crops, and flea beetles, which attack canola and mustard, can be controlled by seed treatment with insecticides. The insecticide Lindane is no longer registered for flea beetle control, but alternatives are available.

Read the label carefully before using any seed treatment or insecticide. Information on their use and recommended rates is found in the *Guide to Crop Protection* 2004 (SAFRR publication). Carryover stocks of treated seed should be tested for germination before using. Treated seed must not be delivered to an elevator or used for feed.

Seed-borne diseases of pulses
Pulse growers should use seed that has been tested for seed-borne diseases such as ascochyta, anthracnose and botrytis. Tolerances for seed infection vary with the pulse crop, the disease, weather conditions of the region and the availability of a seed treatment. If infection of the crop from sources other than seed is likely, using seed with low infection levels becomes less important.

In regions with frequent rainfall and high humidity, tolerances will be lower. Thus, for ascochyta blight of lentil use of seed with up to five per cent seed infection is acceptable in the Brown and Dark Brown Soil Zones, but zero per cent is desirable in the Black Soil Zone. In pea, up to 10 per cent seed infection with ascochyta is acceptable. In chickpea, zero per cent ascochyta seed infection is recommended because of the high rate of transmission of the disease from the seed to the emerging seedlings and its highly destructive nature. A seed treatment for ascochyta-infected lentil seed is now available and is recommended if seed infection levels approach five per cent.

Ergot
Ergot attacks all varieties of rye, triticale, wheat and barley, as well as most common grass species. Oat is rarely attacked and all broadleaf species are immune. Grain containing 0.1 per cent ergot is considered poisonous and should not be used for food. Details of this disease are found in Ergot of Grains and Grasses (Agriculture and Agri-Food Canada Publ. 1438).

Seed Inoculation
Legume crops obtain much of their nitrogen (N) requirement by forming a symbiotic association with soil bacteria called Rhizobium. These bacteria colonize the roots to form structures called nodules where they fix nitrogen for the legume plant. To enhance nitrogen fixation, the legume crop seed should be inoculated. Use the proper strain of bacteria specific to that crop. For further details, consult the *Pulse Production Manual* (Saskatchewan Pulse Growers).

Damp and Frozen Seed
Seed which is stored damp or tough may be low in germination. Grain which will be used for seed should be dried, if necessary, soon after harvest. The drying temperature should be below 37 degrees celcius for batch driers and 43 degrees celcius for recirculating and continuous driers. Frozen grain should always be tested for germination by a seed-testing laboratory before planting. Such grain will frequently produce a high percentage of abnormal seedlings.

Production Notes
All wheat classes, including durum and triticale, are susceptible to wheat midge. Farmers in infested areas should be prepared to spray fields with recommended insecticides if necessary. Refer to the SAFRR publication *Wheat Midge*.

Residue of infected crops may harbour disease pathogens. Seeding into stubble of the same crop kind will increase disease risk, particularly in higher rainfall areas.

Pulse Crops

2003 Regional Variety Trials

In 2003, Saskatchewan Pulse Growers provided a one-year grant of over $85,000 to fill an urgent need for pulse crop regional variety testing in Saskatchewan.

The Crop Development Centre (CDC) collaborated with researchers already onsite at several locations (such as the Agri-ARM sites) in order to make best use of project dollars. The project collected data on varieties from the CDC program as well as Cebeco, Svalof Weibull, Agriculture & Agri-Food Canada (AAFC), and other breeding programs. This project will augment data from Co-op Tests.

Methodology
Field pea, lentil, chickpea, and dry bean variety trials were conducted at 8-14 locations per crop in their target areas of adaptation in Saskatchewan. The number of entries per trial was 24 for pea, 20 for lentil, 24 for chickpea, and 16 for dry bean. Trials were set up and managed by the pulse crop breeding program at the CDC.

Lentil

Main characteristics of varieties

			-- Yield % of Laird --					---------- Resistance to ----------			
Market class	Variety	Years tested*	Areas 1-2	Areas 3-4	Height (cm)	Days to flower	Maturity rating	Ascochyta blight	Anthracnose Race 1	Cotyledon colour	Seed weight (g/1000)
Large green	Laird	9	100	100	41	53	VL	VP	VP	yellow	67
	CDC Glamis	8	110	105	39	54	VL	G	VP	yellow	60
	CDC Grandora	7	107	107	40	53	VL	G	VP	yellow	69
	CDC Plato	5	126	109	38	52	ML	G	P	yellow	62
	CDC Sovereign	7	115	107	40	52	L	G	P	yellow	66
	CDC Sedley	6	115	106	39	51	M	F	VP	yellow	68
Medium green	CDC Richlea	8	132	114	35	50	M	VP	VP	yellow	51
	CDC Vantage	8	133	124	33	49	M	G	VP	yellow	52
Small green	CDC Milestone	9	137	127	31	49	E	G	VP	yellow	37
	CDC Viceroy	4	143	136	34	49	E	G	G	yellow	33
	Eston	8	118	110	30	48	E	VP	VP	yellow	33
French green	CDC LeMay	5	121	114	35	48	E	F	VP	yellow	32
	common	5	122	113	32	49	E	P	VP	yellow	31
Small red	CDC Blaze	5	123	117	30	47	E	G	P	red	34
	CDC Redberry	3	133	130	34	50	EM	G	G	red	42
	CDC Redcap	7	119	117	30	49	E	G	F	red	35
	CDC Redwing	7	118	109	30	50	E	G	VP	red	38
	CDC Robin	6	124	110	30	49	E	G	G	red	30
	Crimson	6	117	112	29	49	E	VP	VP	red	35

* Coop and Regional Trials in Saskatchewan since 1995. Direct comparisons to Laird.

Additional Information:
Indianhead lentil is a black-seeded variety released for green manure use. **CDC Matador** is a brown-seeded variety with yellow cotyledons. Seed supplies are limited for **CDC LeMay, CDC Plato, CDC Viceroy** and **CDC Redberry.**

Detailed agronomic information may be found in the **Pulse Production Manual** available from the Saskatchewan Pulse Growers.

Field Pea

Main characteristics of varieties

Variety	Years tested*	Yield % Alfetta — Area 1,2 & South 3	Area North 3 and 4	Irrigation	Leaf type**	Relative maturity	Vine Length (cm)	Resistance to: Mycosphaerella blight	Powdery mildew	Seed coat breakage	Lodging	Bleaching	Seed coat dimpling***	Green seed coats****	Seed weight g/1000
Yellow															
Alfetta	7	100	100	100	SL	M	60	P	P	F	F	n/a	F	G	290
AC Melfort	4	98	86	87	SL	M	70	F	VG	F	F	n/a	G	F	240
Badminton	4	107	102		SL	E	65	P	P	G	F	n/a	F	G	250
Carneval	7	89	85	107	SL	M	75	F	P	F	G	n/a			230
CDC Bronco	4	119	128	119	SL	M	75	F	VG	G	G	n/a	G	G	230
CDC Golden	4	122	114	120	SL	M	85	F	VG	G	G	n/a	G	G	230
CDC Handel	5	112	99	112	SL	L	75	P	VG	G	F	n/a	G	F	220
CDC Mozart	7	116	110	115	SL	M	70	F	VG	G	F	n/a	G	F	230
CDC Minuet	5	109	108	—	SL	M	70	F	VG	F	F	n/a	G	F	190
Croma	5	101	100	—	SL	E	70	P	P	G	F	n/a	G	G	300
Cutlass	4	122	125	117	SL	M	75	F	VG	F	G	n/a	F	G	220
Delta	4	101	98	—	SL	E	70	P	P	G	F	n/a			250
DS Admiral	5	101	110	96	SL	E	80	F	VG	G	G	n/a	G	G	240
DS Stalwarth	4	97	95	103	SL	M	80	P	VG	G	F	n/a	G	G	240
Eclipse	5	111	110	116	SL	M	80	F	VG	G	G	n/a	F	G	250
Grande	7	93	91	93	N	L	90	F	P	G	F	n/a	G	F	220
Integra	4	85	100	—	SL	E	75	F	P	G	G	n/a	F	F	280
Mandy	4	88	94	96	SL	M	60	P	P	F	F	n/a			270
Miami	5	102	102	—	SL	E	80	P	P	F	G	n/a	G	F	240
Miser ○	4	113	126	—	SL	M	80	F	VG	G	F	n/a	G	G	190
Nicole	4	106	105	—	SL	M	65	P	P	F	F	n/a	G	G	260
SW Belfield ○	4	112	121	114	SL	E	70	P	P	F	F	n/a	F	G	220
SW Bravo	4	88	96	—	SL	E	75	F	P	G	G	n/a	G	G	260
SW Circus ○	4	104	116	108	SL	E	75	F	P	F	G	n/a	F	G	220
SW Capri ○	4	102	108	—	SL	E	75	F	P	F	G	n/a	F	G	210
SW Prize ○	4	100	97	—	SL	E	80	F	P	G	G	n/a	G	G	240
SW Salute ○	4	114	115	—	SL	E	75	P	VG	F	F	n/a	F	F	220
Swing	5	95	99	—	SL	E	75	F	P	VG	G	n/a	G	G	250
Topeka ○	5	113	108	—	SL	E	65	F	VG	G	F	N/A	G	G	260
Green															
CDC Montero	5	99	95	—	SL	M	80	F	VG	G	F	F	F	n/a	230
CDC Striker	4	99	98	—	SL	M	80	F	P	VG	G	G	G	n/a	230
CDC Verdi	5	90	73	—	SL	L	75	F	P	G	F	G	F	n/a	200
Cruiser	4	91	87	—	SL	M	75	F	P	VG	F	G	G	n/a	200
Espace	4	96	101	—	SL	M	75	P	P	F	G	F	F	n/a	230
Logan	4	85	86	—	SL	E	75	P	P	F	G	G	F	n/a	180
Madoc	6	96	99	104	SL	E	70	P	P	F	F	F	F	n/a	250
Majoret	5	79	75	95	SL	M	60	P	P	G	G	F		n/a	250
Millenium	5	103	97	—	SL	E	65	P	P	F	F	F	F	n/a	260
Nitouche	7	94	97	94	SL	M	75	F	P	G	G	G	F	n/a	250
Scuba	4	82	87	—	SL	E	80	P	P	F	F	F	F	n/a	230
Stratus ○	5	118	110	—	SL	M	70	F	VG	G	F	P	G	n/a	270
SW Parade	4	97	88	113	SL	M	70	F	VG	G	F	F	G	n/a	220
Toledo	4	87	95	—	SL	M	70	P	P	G	G	F	F	n/a	280
Venture	4	97	88	—	SL	E	75	P	P	G	F	F	F	n/a	220
Maple				—											
CDC Acer	3	109	100	—	SL	L	60	F	VG	G	F	n/a	G	F	170
CDC April *	4	82	70	—	SL	L	60	F	P	G	F	n/a		n/a	140
CDC Vienna *	5	86	81	—	SL	L	60	F	P	G	F	n/a		n/a	170
Courier	4	98	92	79	SL	M	75	F	P	F	P	n/a	G	F	210
Whero	3	60	57	—	N	L	110	P	P	G	P	n/a		n/a	210
Silage															
CDC Sonata	4	111	100	—	N	L	85	F	VG	F	F	n/a	F	F	220
Trapper	7	74	73	—	N	L	95	P	P	F	P	n/a			140
Victoria	7	80	77	—	N	M	85	P	P	F	P	n/a			190
40-10	2	91	100	—	N	L	100	P	P	F	P	n/a	G		170

* Coop and regional trials in Saskatchewan.

**N-normal leaf type; SL-semi-leafless.

***Seed coat dimpling: VG=0-5%; G=6-20%; F=21-50%.

****Green seed coats: Good = 0-10%; Fair = 11-25%.

* Check with your buyer about acceptability in the Maple market.

Detailed agronomic information may be found in the **Pulse Production Manual** available from the Saskatchewan Pulse Growers.

Chickpea - Kabuli

Main characteristics of varieties

Variety	Years tested	-- Yield (% Sanford) -- Area 1	Area 2	Leaf type*	Ascochyta blight	Height (cm)	Days to flower	Maturity**	Seed weight (g/1000)
Sanford	7	100	100	U	VP	49	56	L	425
Amit (B-90)	6	130	137	F	F	46	56	M	265
CDC ChiChi	5	117	117	F	P	45	53	M	385
CDC Chico	7	136	147	F	P	45	51	E	265
CDC Diva	4	104	117	U	VP	43	52	M	490
CDC Frontier	3	160	164	F	F	45	54	M	375
CDC Xena	7	116	129	U	VP	44	52	M	470
CDC Yuma	7	113	116	F	P	47	53	L	410
Dwelley	3	86	88	U	VP	45	57	VL	490
Evans	4	90	98	U	VP	50	53	L	430

Chickpea - Desi

Main characteristics of varieties

	Years tested	Yield (% Myles) Area 1	Area 2	Leaf type*	Ascochyta blight	Height (cm)	Days to flower	Maturity**	Seed weight (g/1000)	Seed shape***	Seed coat color****
Myles	7	100	100	F	F	41	50	E	200	A	T
CDC Anna	6	108	113	F	F	42	52	M	210	P	T
CDC Cabri	5	111	111	F	F	43	48	E	295	P	T
CDC Desiray	7	97	108	F	F	37	49	E	210	P	LT
CDC Nika	6	97	104	F	F	39	50	M	320	P	T

Area 1: Brown soil zone
Area 2: Dark brown soil zone
* Leaf type: F=fern; U=unifoliate
** Maturity will be delayed in areas with a cool moist summer, especially on clay soils.
*** Seed shape: P=plump; A=angular
**** Seed coat color: T=tan; LT=light tan

Additional Information

Kabuli chickpea is best adapted to stubble or summerfallow production in the Brown soil zone. Desi chickpea is best adapted to stubble production in the Brown and Dark Brown soil zones. Chickpea is a deep-rooted crop, which is efficient in water uptake. Planting on clay soils, regardless of soil zone, increases the risk of prolonged vegetative growth and failure to mature on time. This risk can be reduced by planting on sandier, drought prone soils. Chickpea will tolerate light frosts in the spring. Desi varieties can be seeded in late April or early May. Kabuli varieties should be planted between early to mid May into a warm seedbed, preferably at least 10°C average soil temperature at depth of seeding. This means that kabuli varieties are often later maturing.

Ascochyta blight can completely destroy a chickpea crop. Varieties listed in the recommendation tables differ in their resistance from "Very Poor" to "Poor" to "Fair"; none are rated as "Good". To date, fern-leaf varieties tend to develop less ascochyta blight than unifoliate-leaf varieties. Susceptibility to the disease increases at the flowering and early podding stage. Field scouting for disease symptoms should begin in early June and continue throughout the growing season. Scouting should concentrate on areas where the risk of early infection is higher, e.g. fields adjacent to previous chickpea crops, where plant densities are higher, and in higher moisture areas. Scouting field margins is not sufficient. Fungicide application(s) may be necessary to protect crops. Disease risk is greater under conditions of frequent showers and/or heavy dew, and for varieties rated as Poor or Very Poor. Ascochyta blight is seed-borne and stubble-borne, therefore, growers should use seed with ascochyta blight levels as close to 0% as possible, and plant chickpea in the same field no more than once in four years.

Chickpea requires planting equipment with a seed-feeding mechanism capable of handling large seeds. Chickpea seeds are highly susceptible to damage and should be handled gently at all times. Seed treatment with Apron FL (metalaxyl) for seed rot diseases is strongly recommended for kabuli varieties, and may be required for desi varieties if conditions favour seed rotting diseases. Seed treatment with Crown (carbathiin and thiabendazole) is strongly recommended for both desi and kabuli varieties to reduce the severity of seed-borne ascochyta blight. Plant chickpea seeds approximately 6 cm deep. Seeding rates vary with seed size; target 4 plants/ft^2. Desi varieties are generally earlier maturing and

higher yielding compared to the currently available kabuli varieties. The chickpea crop has stiff stems and can be swathed or straight cut at maturity. Thresh kabuli varieties gently to avoid seed splitting. All **kabuli** chickpea varieties listed have normal ("ram's head") seed shape, with the exception of **Amit** which has a round seed shape.

Certified Seed of **CDC Yuma, CDC Xena, CDC Chico, CDC Diva, CDC Desiray, CDC Anna, and CDC Nika** will be available in 2004.

For more details on production consult the *Pulse Production Manual*, published by the Saskatchewan Pulse Growers.

Dry Bean

Main characteristics of varieties

Variety	Type	Years tested*	- Yield as % of CDC Pintium - Irrigation	Area 2	Area 3	Days to flower	Maturity	Pod** clearance (%)	Seed weight (g/1000)	Growth*** habit
CDC Pintium	pinto	7	100	100	100	50	E	80	350	I
CDC Altiro	pinto	6	102	86	77	47	E	64	357	III
CDC Camino	pinto	6	97	86	76	52	L	81	323	I
CDC Minto	pinto	5	101	95	95	51	M	62	410	III
CDC Pinnacle	pinto	5	102	103	98	53	L	67	352	III
Earliray	pinto	5	82	89	80	50	E	65	349	I
Othello	pinto	6	96	96	89	52	L	51	323	III
Envoy	navy	3	81	78	95	53	M	73	184	I
CDC Whitecap	navy	5	101	95	95	56	M	75	194	II
AC Polaris	great northern	5	106	84	97	52	L	70	310	III
CDC Crocus	great northern	7	101	94	85	47	E	59	355	III
CDC Nordic	great northern	6	77	79	68	52	L	62	319	I
CDC Polar Bear	great northern	4	98	87	77	52	L	65	339	III
US 1140	great northern	6	88	87	81	51	L	53	289	III
CDC Rosalee	pink	4	100	97	85	50	L	65	247	III
Viva	pink	4	94	102	80	51	L	50	242	III
AC Redbond	small red	5	104	102	97	51	M	65	290	II
CDC Expresso	black	7	68	77	71	47	M	87	191	I
CDC Jet	black	4	92	105	111	58	L	80	175	II
CDC Nighthawk	black	5	62	61	67	58	L	77	165	II
UI906	black	5	93	96	71	60	L	76	148	II

* Coop and regional trials grown in narrow rows. Direct comparisons to CDC Pintium.
** Pod clearance: percentage of pods that completely clear the cutter bar at time of swathing.
*** Growth habit: I - determinate bush; II - indeterminate bush; III - indeterminate vine.

Faba Bean

Main characteristics of varieties

Variety	Years tested	— Yield as % of Outlook — (Northeast) Dryland	(South-central) Irrigated	Maturity in days	Seed weight (g/1000)
Outlook	15	100	100	109	360
Aladin	15	104	110	112	400
CDC Blitz	6	101	105	109	410
CDC Fatima	8	100	104	105	520
Cresta	3	92	101	105	630
Orion	6	95	94	103	350
Scirocco	3	96	110	107	550

Additional Information

Faba bean should be seeded early (late April to early May). It is best adapted to irrigated areas in the Dark Brown Soil Zone and the portion of the Black Soil Zone with the longest growing season.

Seed supplies of **CDC Blitz**, **Scirocco** and **Cresta** are limited.
Faba bean is a legume and thus is able to fix nitrogen from the air, provided the seed is inoculated with the proper bacteria prior to planting.

Oilseed Crops

Flax

Main characteristics of varieties

Variety	Years tested	Yield as a % of Vimy — Area 1	Area 2	Area 3	Area 4	Irrigation	Maturity**	Seed size	Resistance to Lodging
Vimy	16	100	100	100	100	100	M	L	P
CDC Arras	9*	99	102	102	101	104	M	L	F
CDC Bethune ⛰	9*	107	109	109	118	113	L	M	G
AC Carnduff ⛰	8*	89	93	99	101	109	M	M	G
AC Emerson	8	96	96	95	93	98	M	L	F
Flanders	11	94	98	96	99	108	L	S	G
Hanley ○	6*	104	99	94	—	111	M	M	G
Lightning ○	7*	100	99	101	—	108	L	M	G
Macbeth ○	6*	—	99	97	—	108	L	M	G
AC McDuff ⛰	7	93	95	97	94	102	VL	M	VG
CDC Mons	5*	—	102	102	—	104	L	S	G
NorLin	16	91	96	99	96	105	M	M	G
CDC Normandy	9	101	100	102	107	101	M	M	F
Prairie Blue ○	5*	—	105	104	—	118	VL	S	VG
Somme	10	94	97	98	97	109	M	M	F
Taurus ⛰	7*	103	102	107	—	109	M	M	G
CDC Valour ⛰	7	96	101	95	98	96	E	M	G
AC Watson ⛰	7	96	97	102	111	105	M	M	G
Solin									
CDC Gold ○	5*	—	89	82	—	—	E	L	G
1084 ⛰	7*	95	94	99	112	102	M	S	G
2047 ⛰	5*	—	95	99	—	100	M	M	G
2090 ○	4*	—	102	104	—	—	M	L	G

* Data from Regional and Co-op Yield Trials.

** Relative Maturity: The relative maturity of the check, Vimy, is M (on average 103 days from seeding to swathing ripeness).

Additional Information:

All varieties are resistant to rust and moderately resistant to Fusarium wilt.

CDC Gold, **CDC Mons**, **Prairie Blue** and **2090** are newly registered varieties of which no seed will be available in 2004. **CDC Gold** is a solin variety distributed by the Saskatchewan Wheat Pool, **CDC Mons** by Quality Assured Seeds, **Prairie Blue** by the SeCan Association and the solin variety **2090** by Agricore United/Proven Seed.

Solin is defined as a type of flax with less than 5% linolenic acid in its oil and having a yellow seed coat. Solin varieties produce food quality oil and, as such, cannot be sold in traditional flax markets. They are available only for contract production.

Frozen flax should be analyzed by a feed testing laboratory to determine that it is free of prussic acid before using it as a livestock feed.

Mustard

Main characteristics of varieties

Type & Variety	Years Tested	Yield as % of AC Pennant	Protein % seed	Mucilage[1] cS*ml g^{-1}
Yellow				
AC Pennant	13	100	34.3	36.1
AC Base	10	101	34.2	33.7
Tilney	13	95	34.7	39.8
Viscount	13	92	35.1	45.0
Ace	6	99	35.1	41.4
Andante	5	100	35.2	46.5

	Years Tested	Yield as % of Cutlass	Fixed oil % seed	Volatile oil[2] mg g^{-1} seed
Oriental				
Cutlass	22	100	41.1	10.2
Forge	18	98	38.6	10.5
AC Vulcan	13	101	40.6	11.2

	Years Tested	Yield as % of Cutlass	Fixed oil % seed	Volatile oil[2] mg g^{-1} seed
Brown				
Commercial	22	92	37.9	8.8
Duchess	6	94	38.0	8.7

[1] mucilage in centi Stoke per 1g seed (a measure of relative density)
[2] volatile oil as allyl isothiocyanate

Seed quality data based on four years of testing for yellow mustard and five years for oriental and brown mustard.

Additional Information:

Mustard is grown in the drier regions of Saskatchewan. Yellow mustard (*Sinapis alba*) varieties mature in approximately 90-92 days, brown varieties in 85 days and oriental (*Brassica juncea*) varieties mature in 86-88 days. Top grades of mustard seed are obtained from well matured, good colour seeds with minimal damage and are free of seeds from volunteer canola plants and weed seeds such as cow cockle.

Mustard is normally grown under contract.

Yellow mustard has a high protein content with newer varieties, **Viscount** and **Andante**, also having high mucilage content. **Forge** and **AC Vulcan** have high volatile oil content, which is a desirable trait for oriental mustard, as is the low fixed oil content. All mustard varieties have good resistance to blackleg disease. The oriental type varieties **AC Vulcan** and **Cutlass** are resistant to white rust, while **Forge** and the brown mustard varieties, **Commercial Brown** and **Duchess,** are highly susceptible.

Sunflower

Main characteristics of varieties

Oilseed

Variety	Years Tested	Yield as % of IS 6111	Average Maturity in days	Oil %*
IS 6111	13	100	121	46.6
63A70	5	111	122	49.6

* Dry basis

Oilseed (EMSS)

	Years Tested	Yield as % of P6150	Average Maturity in days	Oil %*
P6150	11	100	112	46.9
63A21	5	110	114	47.5

* Dry basis

Confection

Variety	Years Tested	Yield as % of IS 6111	Average Maturity in days	Seed size % over 20/64
IS8048	5	110	124	62.8

Additional Information:

Sunflower requires 105-125 days to mature, depending on the cultivar and the growing season. Oilseed sunflower has been grown in the Dark Brown and Black soil zones in southeastern Saskatchewan.

The earlier maturing, short stature (EMSS) varieties are adapted to production in most areas of Saskatchewan.

The Saskatchewan Sunflower Committee has been conducting trials in Saskatchewan for the purpose of registration and demonstration since 1983. Varieties that have been tested in official Saskatchewan Sunflower Committee trials for three years and are registered for production in Canada are placed on this list.

The Committee has been testing NuSun, a sunflower with a fatty acid profile desired by major frying companies. There will be additional acres of oilseed sunflower required to address the increased birdseed market.

Argentine Canola

Main characteristics of varieties

Variety Name	Varietal kind*	Maturity Zones (+/- days) Short-	Mid-	Long-	Yield (% of check) Short-	Mid-	Long-	Height (+/- inches)	Resistance to Lodging (+ = better)**	Blackleg***
Argentine Canola										
46A65 ⏏ (Check, bu/ac)	OP	0	0	0	100(50)	100(45)	100(48)	0	0	R
Conventional										
Y0276	HYB	2	0	0	104	108	104	4	0	R
46H02	HYB	1	0	1	108	119	117	2	0	R
99CH01	OP	—	2	—	—	94	—	4	1	MR
SW WIZZARD ●	OP	—	1	0	—	104	109	3	1	R
Clearfield										
6045CL	OP	1	-1	1	89	84	91	1	0	MR
1604	OP	—	2	3	—	96	94	2	1	MR
46A76 ⏏	OP	5	2	2	97	102	95	4	1	R
Cougar CL ●	OP	2	1	—	94	96	—	-1	0	R
Liberty Link										
5003	HYB	-7	—	—	103	—	—	-2	0	R
5020	HYB	-2	-1	-1	123	122	130	1	0	R
5030	HYB	2	1	1	118	131	126	7	1	R
Roundup Ready										
512 RR	HYB	2	1	1	101	103	104	5	0	R
LBD422RR	OP	1	0	-1	102	98	101	-1	0	R
LBD588RR	OP	3	1	1	89	95	99	3	1	R
LBD644RR	OP	-1	-1	-1	107	103	104	-1	0	R
1812	S	—	2	2	—	101	97	4	0	MR
1841	HYB	3	1	2	104	119	112	3	1	R
1849	OP	—	1	0	—	101	99	0	0	R
1862 ●	OP	1	0	—	101	99	—	-4	0	MR
3235 ⏏	OP	1	—	--	96		—	0	0	MR
34-55 ⏏	OP	4	1	1	96	97	98	2	0	MR
35-85 ⏏	OP	—	—	2	—		98	3	0	R
43A56 ●	OP	-7	-4	—	96	97	—	-1	0	MR
45H21	HYB	-1	0	0	111	120	123	2	0	R
46H23	HYB	2	0	0	103	116	110	3	0	R
Prairie 719RR	OP	-1	0	-1	103	102	107	0	0	R
SW Hymark 3944 RR	HYB	—	—	2	—		103	2	1	MR
SW Razor	S	—	0	1	—	102	108	1	0	MR
9550	OP	3	2	2	100	104	102	2	0	R
SW Rider	S	2	0	—	97	98	—	1	1	MS
SW GladiatoRR	S	—	0	0	—	110	108	2	0	MR
SP Admirable RR	S	—	1	1	—	107	106	2	1	MR
SP Banner ●	OP	0	0	-1	101	103	101	1	0	R
SP CANWOOD ●	OP	0	—	—	97		—	-2	0	MR
FORTUNE RR	OP	1	0	0	95	94	98	2	0	R
Specialty Canola - Roundup Ready										
Victory v1010†	HYB	4	1	1	93	101	98	3	0	MS
IMC109RR†	OP	2	1	0	90	88	96	0	0	MR
IMC208RR†	OP	2	1	0	74	74	71	-2	0	MR
SP CRAVEN† ●	OP	—	1	—	—	86	—	-2	0	R

Polish Canola (Conventional)

Variety Name	Varietal kind*	Maturity Zone (+/- days) Short-	Mid-	Long-	Seed Yield (% of check) Short-	Mid-	Long-	Average yield (%)	Resistance to White rust	Blackleg***
AC Sunbeam (check, bu/ac)	OP	0	0	—	100(33)	100(26)	—	100	R	S
ACS-C7	S	2	2	—	98	102	—	102	R	MS
SW SPIRIT RIVER	OP	3	5	—	102	101	—	101	R	S

* Varietal kind: OP = open-pollinated, HYB = hybrid, S = synthetic

** Resistance to lodging relative to 46A65

*** Blackleg ratings: R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible

†Low linolenic acid variety

Additional Information

This year marks the launch of a brand new canola variety testing program called Prairie Canola Variety Trials (PCVT). The new testing system unites provincial variety testing programs to standardize protocol and improve trial consistency and quality. Now growers can look to a single source for information on how a canola variety performed in three different zones across western Canada. The canola seed industry, Alberta Agriculture Food and Rural Development, Saskatchewan Agriculture Food and Rural Revitalization, Manitoba Agriculture and Food, Agriculture & Agri-Food Canada, and the Canola Council of Canada (CCC) contributed to PCVT in 2003.

Trials were conducted by seed companies, government researchers and independent contractors in three growing zones across the prairies: short-, mid- and long-season zones (see map). Varietal characteristics appear in the table. **It is important to note that this table represents data collected in one year only (2003). All Saskatchewan sites used in this data set were located in the mid-season zone, with the exception of Outlook, which is included in the long-season zone. Although two short-season sites were seeded in Saskatchewan, neither produced usable data for the table.** Site-specific data can be found in the Canola Digest or on the CCC website (http://www.canola-council.org).

Interpreting PCVT information:

1. Use the map to identify your zone of adaptation. For site-specific data please refer to the Canola Digest or the Canola Council of Canada website. Don't limit your search to the areas closest to you. Comparing local results to other locations with similar growing conditions can also be valuable.

2. Zone tables show the actual yield of the Argentine check (46A65) or Polish check (AC Sunbeam) and other variety yields relative to the check. Although variety trials are carefully conducted, small percentage differences (e.g. <5%) in yield are usually insignificant.

3. The table includes information on maturity, resistance to lodging and blackleg, varietal type (open-pollinated, hybrid, synthetic), and herbicide tolerance. Use this information in addition to yield when choosing a variety.

Argentine Canola

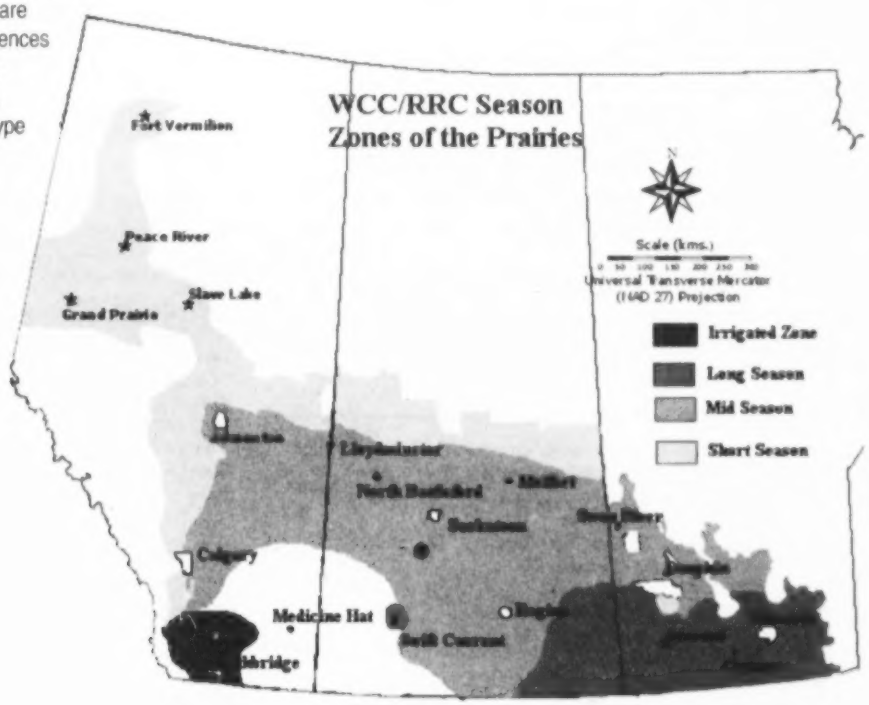
Argentine varieties mature two weeks later than Polish varieties and are therefore better suited to the mid- and long-season growing areas of Saskatchewan. Blackleg disease, which is now wide spread in Saskatchewan, can cause severe yield losses in varieties that are susceptible (S). Argentine varieties are susceptible to seed shattering when left standing at full maturity. Later maturing varieties tend to produce higher levels of green seed under wet and cool conditions at harvest, which can cause substantial grade reductions. The control of herbicide tolerant canola volunteers requires good agronomic practice such as proper crop and herbicide rotation.

Polish Canola

Polish varieties mature approximately two weeks earlier than Argentine varieties and are therefore less likely to produce green seed. Polish varieties are more heat and drought tolerant than Argentine varieties. They are also more shatter resistant than Argentine varieties and are therefore well suited to straight combining.

***Brassica juncea* Canola**

Brassica juncea canola is a new class of canola that is adapted to the brown and dark brown soil zones (Areas 1 and 2). It has very good resistance to blackleg and exhibits better heat and drought tolerance than other canolas. *B. juncea* canola has shattering resistance similar to Polish canola, and is therefore well suited to straight combining. Currently all production is contracted and only two varieties are available: Arid and Amulet. Both varieties yield approximately 112% of AC Excel (Argentine) in their zone of adaptation



Additional Information

This year marks the launch of a brand new canola variety testing program called Prairie Canola Variety Trials (PCVT). The new testing system unites provincial variety testing programs to standardize protocol and improve trial consistency and quality. Now growers can look to a single source for information on how a canola variety performed in three different zones across western Canada. The canola seed industry, Alberta Agriculture Food and Rural Development, Saskatchewan Agriculture Food and Rural Development, Manitoba Agriculture and Food, Agriculture & Agri-Food Canada, and the Canola Council of Canada (CCC) contributed to PCVT in 2003.

[illegible] It is important to note that this data represents data collected in one year only (2003). All Saskatchewan sites used in this data set were located in the mid season zone, with the exception of Outlook, which is classified in the long season zone. Although test sites were seeded in each of Saskatchewan's three growing seasons, only the data from the mid season zone was analyzed.

Interpreting PCVT Information

1. [illegible]
2. [illegible] Yield Check (AC Excalibur) and other variety yields relative to the check. Although variety trials are carefully conducted, small percentage differences (e.g. <5%) in yield are usually insignificant.
3. The table includes information on maturity, resistance to lodging and blackleg, varietal type (open pollinated, hybrid, synthetic), and herbicide tolerance. Use this information in addition to yield when choosing a variety.

Argentine Canola

Argentine varieties mature two weeks later than Polish varieties and are therefore better suited to the mid- and long-season growing areas of Saskatchewan. Blackleg disease, which is now widespread in Saskatchewan, can cause severe yield losses in varieties that are susceptible (S). Argentine varieties are susceptible to seed shattering when left standing at full maturity. Later maturing varieties tend to produce higher levels of green seed under wet and cool conditions at harvest, which can cause substantial grade reductions. The majority of herbicide tolerant canola varieties require grain segregation and are grown in Argentine canola herbicide tolerance.

Polish Canola

[illegible]

Brassica carinata Canola

[illegible]

Breeding institutions and seed distributors of varieties listed in this publication

Crop kind, Class & Variety	Breeding Institution	Distributor
Wheat		
Bread Wheat		
5500HR	Agripro/Agricore United	Proven Seed
5600 HR	Agripro/Agricore United	Proven Seed
5601HR	Agripro/Agricore United	Proven Seed
AC Abbey	AAFC (Swift Current)	Canterra Seeds
AC Barrie	AAFC (Swift Current)	SeCan Members
CDCBounty	U of S - CDC	Canterra Seeds
AC Cadillac	AAFC (Swift Current)	QAS
AC Cora	AAFC (Winnipeg)	SeCan Members
AC Domain	AAFC (Winnipeg)	SeCan Members
AC Eatonia	AAFC (Swift Current)	Proven Seed
AC Elsa	AAFC (Swift Current)	SeCan Members
AC Intrepid	AAFC (Swift Current)	Canterra Seeds
Harvest	AAFC (Winnipeg)	QAS
Journey	Sask. Wheat Pool	Sask. Wheat Pool
Katepwa	AAFC (Winnipeg)	SeCan Members
Laura	AAFC (Swift Current)	SeCan Members
Lillian	AAFC (Swift Current)	SeCan Members
Lovitt	AAFC (Swift Current)	Canterra Seeds
AC Majestic	AAFC (Winnipeg)	SeCan Members
McKenzie	Sask. Wheat Pool	SWP/Proven Seed
Prodigy	Sask. Wheat Pool	SWP/Proven Seed
AC Splendor	AAFC (Winnipeg)	SeCan Members
Superb	AAFC (Winnipeg)	SeCan Members
CDC Teal	U of S - CDC	QAS
CDC Imagine	U of S – CDC	Sask. Wheat Pool
Canada Prairie Spring Wheat		
5700PR	Agripro/Agricore United	Proven Seed
5701PR	Agripro/Agricore United	Proven Seed
AC 2000	AAFC (Swift Current)	SeCan Members
AC Crystal	AAFC (Swift Current)	SeCan Members
AC Foremost	AAFC (Swift Current)	SeCan Members
AC Karma	AAFC (Swift Current)	SeCan Members
AC Taber	AAFC (Swift Current)	SeCan Members
AC Vista	AAFC (Swift Current)	QAS
Canada Western Extra Strong		
Amazon	University of Manitoba	Canterra Seeds
AC Corinne	AAFC (Winnipeg)	QAS
Glenavon	AAFC (Winnipeg)	SeCan Members
CDC Rama	U of S – CDC	QAS
Glenlea	University of Manitoba	Public
Hard White Spring Wheat		
Kanata	AAFC (Winnipeg)	QAS
Snowbird	AAFC (Winnipeg)	QAS
Durum		
AC Avonlea	AAFC (Swift Current)	QAS
Kyle	AAFC (Swift Current)	SeCan Members
AC Morse	AAFC (Winnipeg)	SeCan Members
Napoleon	AAFC (Winnipeg)	Canterra Seeds
AC Navigator	AAFC (Swift Current)	Sask. Wheat Pool

AC	- as a prefix to variety names Agriculture Canada (Agriculture and Agri-Food Canada)
AAFC	- Agriculture and Agri-Food Canada
CDC	- Crop Development Centre
AAFRD	- Alberta Agriculture Food and Rural Development, Lacombe, Alta.
U	- University
U of S	- University of Saskatchewan, Saskatoon
USDA	- United States Department of Agriculture
QAS	- Quality Assured Seeds
SWP	- Saskatchewan Wheat Pool

Crop kind, Class & Variety	Breeding Institution	Distributor
Soft White Spring Wheat		
AC Andrew		
AC Nanda	AFFC (Lethbridge)	QAS
AC Phil	AAFC (Lethbridge)	SeCan Members
AC Reed	AAFC (Lethbridge)	SeCan Members
Winter Wheat		
AC Bellatrix	AAFC (Lethbridge)	QAS
CDC Buteo	U of S – CDC	
CDC Clair	U of S - CDC	SeCan Members
CDC Falcon	U of S - CDC	SeCan Members
CDC Harrier	U of S - CDC	SeCan Members
CDC Kestrel	U of S - CDC	
CDC Osprey	U of S - CDC	Canterra Seeds
CDC Raptor	U of S - CDC	SeCan Members
McClintock	AAFC (Winnipeg)	Canterra Seeds
Winter Rye		
AC Remington	AAFC (Swift Current)	Proven Seed
Danko		Proven Seed
Kodiak	University of Alberta	Proven Seed
Prima	AAFC (Swift Current)	SeCan Members
AC Rifle	AAFC (Swift Current)	Proven Seed/Canterra
Spring Rye		
Gazelle	U of S	Public
Triticale		
AC Alta	AAFC (Swift Current)	Progressive Seeds
AC Ultima	AAFC (Swift Current)	QAS
AC Certa	AAFC (Swift Current)	Progressive Seeds
AC Copia	AAFC (Swift Current)	QAS
Bobcat	AAFRD (Lacombe)	Progressive Seeds
Pika	AAFRD (Lacombe)	Progressive Seeds
Pronghorn	AAFRD (Lacombe)	Progressive Seeds
Sandro	Swiss Fed Ag Res	ProMark Seed
Barley		
Malting		
B1602	Busch Ag. Res.	Sask.Wheat Pool
AC Bountiful	AAFC (Brandon)	QAS
CDC Battleford	U of S - CDC	SeCan Members
Calder	AAFC (Brandon)	SeCan Members
CDC Copeland	U of S - CDC	SeCan Members
Excel	U of Minnesota	Proven Seed, Others
CDC Kendall	U of S - CDC	Proven Seed/SWP
Harrington	U of S - CDC	SeCan Members
Lacey	U of Minnesota	ProMark Seed
Legacy	Busch Ag Res.	SWP/Proven Seed/QAS
AC Metcalfe	AAFC (Brandon)	SeCan Members
Merit	Busch Ag. Res.	SWP/Proven Seed/QAS
Newdale	AAFC (Brandon)	QAS
Robust	U of Minnesota	Cargill Seed, Others
CDC Select	U of S - CDC	Proven Seed
CDC Sisler	U of S - CDC	Proven Seed
Stein	U of S - CDC	Proven Seed
CDC Springside	U of S – CDC	Proven Seed
CDC Stratus	U of S - CDC	QAS
CDC Tisdale	U of S – CDC	QAS
Tradition	Busch Ag. Res.	Proven Seed/QAS
CDC Yorkton	U of S - CDC	Canterra Seeds
Feed		
CDC Bold	U of S - CDC	Canterra Seeds
CDC Dolly	U of S - CDC	SeCan Members
CDC Fleet	U of S - CDC	QAS
AC Harper	AAFC (Lethbridge)	SeCan Members
CDC Helgason	U of S - CDC	SeCan Members
AC Lacombe	AAFC (Lacombe)	SeCan Members
Niobe	AAFRD (Lacombe)	SeCan Members
Rivers	AAFC (Brandon)	Canterra Seeds
AC Rosser	AAFC (Brandon)	SeCan Members

Breeding institutions and seed distributors (continued)

Crop kind, Class & Variety	Breeding Institution	Distributor
Stander	U of Minnesota	Sask. Wheat Pool
CDC Trey	U of S – CDC	QAS
Trochu	AAFRD (Lacombe)	SeCan Members
Xena	Agricore/W. Plant Breeders	Proven Seed/SWP
Hulless		
AC Bacon	AAFC (Brandon)	SeCan Members
CDC Dawn	U of S - CDC	SeCan Members
CDC Freedom	U of S - CDC	SeCan Members
CDC Gainer	U of S - CDC	QAS
HB805	W. Plant Breeders	Proven Seed
CDC McGwire	U of S - CDC	SeCan Members
Peregrine	AAFRD (Lacombe)	Progressive Seeds
Tercel	AAFRD (Lacombe)	Progressive Seeds
Intensive Management		
CDC Earl	U of S - CDC	SeCan Members
Kasota	AAFRD (Lacombe)	SeCan Members
Mahigan	AAFRD (Lacombe)	SeCan Members
Niska	AAFRD (Lacombe)	Canterra Seeds
Vivar	AAFRD (Lacombe)	SeCan Members
Forage		
Dillon	W. Plant Breeders	Agricore United
AC Hawkeye	AAFC (Brandon)	Agricore United
AC Ranger	AAFC (Brandon)	QAS
Westford	W. Plant Breeders	Agricore United
Oat		
AC Assiniboia	AAFC (Winnipeg)	Proven Seed
CDC Boyer	U of S - CDC	SeCan Members
Boudrias	AAFC (Lacombe)	QAS
Bullion	Svalof Weibull AB	Proven Seed
Calibre	U of S - CDC	SeCan Members
CDC Dancer	U of S - CDC	QAS / Cargill
CDC Orrin	U of S - CDC	QAS
Derby	U of S - CDC	Proven Seed
Furlong	AAFC (Winnipeg)	Canterra Seeds / Cargill
AC Gwen	AAFC (Winnipeg)	SeCan Members
Kaufmann	AAFC (Lacombe)	SeCan Members
AC Morgan	AAFC (Lacombe)	SeCan Members
CDC Pacer	U of S - CDC	QAS
Pinnacle	AAFC (Winnipeg)	QAS
Ronald	AAFC (Winnipeg)	SeCan Members
SW Exactor	Svalof Weibull AB	QAS
Triple Crown	Svalof Weibull AB	ProMark Seed
CDC Baler	U of S - CDC	QAS
CDC Bell	U of S - CDC	Sask. Wheat Pool
Murphy	AAFC (Lacombe)	SeCan Members
Canola		
Argentine		
1604	Canterra Seeds	Canterra Seeds
1812	DSV Canada	Canterra Seeds
1841	Canterra Seeds	Canterra Seeds
1849	Canterra Seeds	Canterra Seeds
1862	Canterra Seeds	Canterra Seeds
3235	Monsanto Canada	Monsanto Canada
34-55	Monsanto Canada	Monsanto Canada
35-85	Monsanto Canada	Monsanto Canada
PR6450	Monsanto Canada	Monsanto Canada
43A56	Pioneer Hi-Bred	Pioneer Hi-Bred
45H21	Pioneer Hi-Bred	Pioneer Hi-Bred
46A65	Pioneer Hi-Bred	Pioneer Hi-Bred
46A76	Pioneer Hi-Bred	Pioneer Hi-Bred
46H02	Pioneer Hi-Bred	Pioneer Hi-Bred
46H23	Pioneer Hi-Bred	Pioneer Hi-Bred
5003	Bayer CropScience	Bayer CropScience
5020	Bayer CropScience	Bayer CropScience
5030	Bayer CropScience	Bayer CropScience
512 RR	ADVANTA SEEDS	ADVANTA SEEDS
Y0276	ADVANTA SEEDS	ADVANTA SEEDS
6045CL	DSV Canada	Brett-Young Seeds
LBD422RR	DSV Canada	Brett-Young Seeds
LBD588RR	DSV Canada	Brett-Young Seeds
LBD644RR	DSV Canada	Brett-Young Seeds
9550	Proven Seeds	Proven Seeds
SW Rider	Svalof Weibull AB	Proven Seeds / SWP
99CH01		SEED DIRECT INC
Cougar CL	U. of Alberta	Sask. Wheat Pool
SP Admirable RR	Sask. Wheat Pool	Sask. Wheat Pool
SP Banner	Sask. Wheat Pool	Sask. Wheat Pool
SP CANWOOD	Sask. Wheat Pool	Sask. Wheat Pool
SP CRAVEN	Sask. Wheat Pool	Sask. Wheat Pool
FORTUNE RR	SeedLink	SeCan Members
IMC109RR	Cargill Specialty Oils	Cargill Specialty Oils
IMC208RR	Cargill Specialty Oils	Cargill Specialty Oils
Victory v1010	Cargill Specialty Oils	Cargill Specialty Oils
Prairie 719RR	DSV Canada	Prairie Seeds
SW GladiatoRR	Svalof Weibull AB	Quality Assured Seeds
SW RazoR	Svalof Weibull AB	ProMark Seed
SW Hymark 3944RR	Svalof Weibull AB	ProMark Seed
SW Wizzard	Svalof Weibull AB	ProMark Seed
Polish		
ACS-C7	AAFC (Saskatoon)	
AC Sunbeam	AAFC (Beaverlodge)	SeCan Members
SW SPIRIT RIVER	Svalof Weibull AB	Peace Pedigreed Seed
Flax		
CDC Arras	U of S – CDC	QAS
CDC Bethune	U of S – CDC	SeCan Members
AC Carnduff	AAFC (Morden)	SeCan Members
CDC Mons	U of S – CDC	QAS
AC Emerson	AAFC (Morden)	SeCan Members
Flanders	U of S - CDC	SeCan Members
CDC Gold	U of S – CDC	Sask. Wheat Pool
Hanley	AAFC (Morden)	SeCan Members
Lightning	AAFC (Morden)	Canterra Seeds
1084	CSIRO/UGG	Proven Seed
2047	CSIRO/UGG	Proven Seed
2090	CSIRO/UGG	Proven Seed
Macbeth	AAFC (Morden)	Proven Seed
AC McDuff	AAFC (Morden)	Proven Seed
NorLin	AAFC (Morden)	SeCan Members
CDC Normandy	U of S - CDC	SeCan Members
Prairie Blue	AAFC (Morden)	SeCan Members
Somme	U of S - CDC	SeCan Members
Taurus	Cebeco Zaden	QAS
CDC Valour	U of S - CDC	SeCan Members
Vimy	U of S - CDC	SeCan Members
AC Watson	AAFC (Morden)	Sask. Wheat Pool
Mustard		
Brown		
commercial		Trade
Duchess	Proven Seed	Proven Seed
Oriental		
Cutlass	AAFC (Saskatoon)	Trade
Forge	Colman's of Norwich	Sask. Wheat Pool
AC Vulcan	AAFC (Saskatoon)	Sask. Wheat Pool
Yellow		
AC Base	AAFC (Saskatoon)	Proven Seed
AC Pennant	AAFC (Saskatoon)	Sask. Wheat Pool
Ace		Proven Seed
Andante		Proven Seed
Tilney	Colman's of Norwich	Proven Seed
Viscount	Colman's of Norwich/UGG	Proven Seed
Sunflower		
63A21	Pioneer Hi-Bred	Pioneer Hi-Bred
63A70	Pioneer Hi-Bred	Pioneer Hi-Bred
IS 6111	Interstate Seeds	Advanta Seeds
IS 8048	Advanta Seeds	Advanta Seeds
P6150	Pioneer Hi-Bred	Pioneer Hi-Bred

Breeding institutions and seed distributors (continued)

Crop kind, Class & Variety	Breeding Institution	Distributor
Field Pea		
40-10	SWS, Germany	QAS
CDC Acer	U of S – CDC	Sask. Pulse Growers
DS Admiral	Danisco Seeds	QAS
Alfetta	Cebeco Zaden	QAS
Badminton	Progene	West-Son Products Ltd.
CDC April	U of S - CDC	QAS
CDC Bronco	U of S – CDC	Sask. Pulse Growers
CDC Golden	U of S – CDC	Sask. Pulse Growers
SW Belfield	Svalof Weibull AB	
SW Bravo	Svalof Weibull AB	Canterra Seeds
SW Capri	Svalof Weibull	Canterra Seeds
Carneval	Svalof Weibull AB	Sask. Wheat Pool
SW Circus	Svalof Weibull AB	
Croma	Cebeco Zaden	Canterra Seeds
Cruiser	NZ Crop & Food	Canterra Seeds
Cutlass	AAFRD/CDC	Sask. Pulse Growers
Courier	NZ Crop & Food	Canterra Seeds
Delta	Cebeco Zaden	QAS
Eclipse	Cebeco Zaden	QAS
Espace	Cebeco Zaden	St. Denis Seeds AB
Grande	Svalof Weibull AB	Sask. Wheat Pool
CDC Handel	U of S - CDC	Sask. Pulse Growers
Integra	Cebeco Zaden	St. Denis Seeds AB
Logan	Proven Seed	Proven Seed
Madoc		Terramax
Mandy	Mansholt	Terramax
Majoret	Svalof Weibull AB	ProMark Seed
AC Melfort	AAFC Morden	Canterra Seeds
Miami	Advanta Seeds.	QAS
Millenium	Mansholt	Terramax
Miser	AAFC	QAS
CDC Minuet	U of S - CDC	Sask. Pulse Growers
CDC Montero	U of S - CDC	Sask. Pulse Growers
CDC Mozart	U of S - CDC	Sask. Pulse Growers
Nicole	Advanta Seeds	QAS
Nitouche	DLF Trifolium (Denmark)	QAS
SW Parade	Svalof Weibull AB	Sask. Wheat Pool
SW Prize	Svalof Weibull AB	
SW Salute	Svalof Weibull	ProMark Seed
Scuba	Advanta Seeds	QAS
CDC Sonata	U of S - CDC	Sask. Pulse Growers
DS Stalwarth	Danisco Seeds	Secan Members
CDC Striker	U of S – CDC	Sask. Pulse Growers
Stratus	Cebeco Zaden	Canterra Seeds
Swing	Cebeco Zaden	QAS
Toledo	Cebeco Zaden	Canterra Seeds
Topeka	Cebeco Zaden	Canterra Seeds
Trapper	AAFC (Morden)	Public
Venture	Axel Toft	Johnson Seeds (MB)
CDC Verdi	U of S - CDC	Sask. Pulse Growers
CDC Vienna	U of S – CDC	Walker Seed
Victoria	Svalof Weibull AB	ProMark Seed
Whero	Challenge Seeds	Northern Virgin Oils
Lentil		
CDC Blaze	U of S - CDC	Sask. Pulse Growers
CDC LeMay	U of S - CDC	Sask. Pulse Growers
CDC Plato	U of S - CDC	Sask. Pulse Growers
Crimson	USDA/Washington State U	Public
Eston	U of S - CDC	SeCan Members
CDC Glamis	U of S - CDC	Sask. Pulse Growers
CDC Grandora	U of S - CDC	Sask. Pulse Growers
CDC Matador	U of S - CDC	
CDC Milestone	U of S - CDC	Sask. Pulse Growers
Laird	U of S - CDC	SeCan Members
CDC Redberry	U of S – CDC	Sask. Pulse Growers
CDC Redcap	U of S - CDC	Sask. Pulse Growers
CDC Redwing	U of S - CDC	Sask. Wheat Pool
CDC Richlea	U of S - CDC	SeCan Members
CDC Robin	U of S - CDC	Sask. Pulse Growers
CDC Sedley	U of S - CDC	Sask. Pulse Growers
CDC Sovereign	U of S - CDC	Sask. Pulse Growers
CDC Vantage	U of S - CDC	Sask. Pulse Growers
CDC Viceroy	U of S – CDC	Sask. Pulse Growers
Faba Bean		
Aladin	University of Manitoba	Public
CDC Blitz	U of S - CDC	
Cresta	Saatbau Linz	Canterra Seeds/Agriprogress
CDC Fatima	U of S - CDC	R.Legumex/Walker S.
Orion	AAFC (Lacombe)	Roger Lee, Lyster Farm
Outlook	U of S - CDC	SeCan Members
Scirocco	NPZ-Lembke	Agriprogress Inc.
Dry Bean		
AC Polaris	AAFC (Lethbridge)	
AC Redbond	AAFC (Lethbridge)	
CDC Camino	U of S - CDC	Sask. Pulse Growers
CDC Crocus	U of S - CDC	Klempnauer
Envoy	Gen-Tec	
Othello	USDA/ARS (Prosser, WA)	Public
Earliray	Gen-Tec	
US 1140	USDA	Public
CDC Expresso	U of S - CDC	Canterra Seeds
CDC Jet	U of S – CDC	B&J Martens Seeds
CDC Minto	U of S – CDC	Canterra Seeds
CDC Nighthawk	U of S - CDC	QAS
CDC Nordic	U of S - CDC	Sask. Pulse Growers
CDC Pintium	U of S - CDC	Sask. Pulse Growers
CDC Polar Bear	U of S – CDC	Canterra Seeds
CDC Rosalee	U of S - CDC	QAS
UI 906	University of Idaho	Public
Viva		Public
CDC Whitecap	U of S – CDC	Canterra Seeds
CDC Pinnacle	U of S - CDC	Sask. Pulse Growers
CDC Altiro	U of S - CDC	Sask. Pulse Growers
Chickpea		
Desi		
CDC Anna	U of S - CDC	Sask. Pulse Growers
CDC Cabri	U of S – CDC	Sask. Pulse Growers
CDC Desiray	U of S - CDC	Sask. Pulse Growers
Myles	USDA/Washington State U	Public
CDC Nika	U of S - CDC	Sask. Pulse Growers
Kabuli		
Amit (B-90)		Proven Seed
CDC Chico	U of S - CDC	Sask. Pulse Growers
CDC ChiChi	U of S - CDC	Sask. Pulse Growers
CDC Diva	U of S - CDC	Sask. Pulse Growers
Dwelley	USDA/Washington State U	Public
Evans	USDA/Washington State U	Public
CDC Frontier	U of S – CDC	Sask. Pulse Growers
Sanford	USDA/Washington State U	Public
CDC Xena	U of S - CDC	Sask. Pulse Growers
CDC Yuma	U of S - CDC	Sask. Pulse Growers
Canary Seed		
Elias	U of Minnesota; U of S - CDC	Public
Keet	U of Minnesota; U of S - CDC	Public
CDC Maria	U of S - CDC	C. Special Crops
Safflower		
Saffire	AAFC (Lethbridge)	Jerry Kubic (AB)
AC Stirling	AAFC (Lethbridge)	SeCan Members
AC Sunset	AAFC (Lethbridge)	Proven Seed